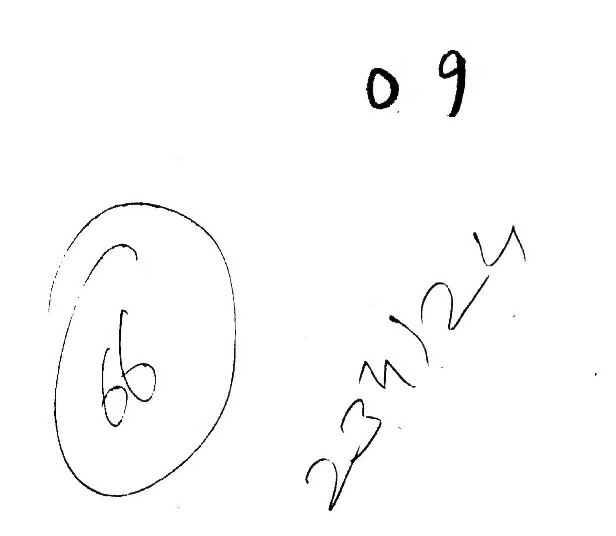
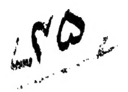
0 9



نجم الدين كردي



الذيل الاول وفيه رسالتان في علم المنطق

الرسالة الاولى وهي الرسالة الشمسية

لنجم الدين ابن بكر بن علي

بن عمر الكاتبي

القزويني

قال الويس اسفرنجر التيرولي

قال مصنف نفائس المآثر مولانا نجم الدين كاتبي قزويني كه حكيم
متبحر است و در حكمت شاگرد اثير الدين ابهري است شرح
تلخيص و شرح محصل و حكمت عين و رسالهٔ شمسيه
و جامع الدقائق از مصنفات اوست
وفاتش روز جمعه ثالث رجب
سنة خمس و سبعين
و ست مائة
بود

بسم الله الرحمن الرحيم

١ الحمد لله الذي ابدع نظام الوجود ۰ و اخترع ماهيات الاشياء بمقتضى الوجود ۰ و انشأ بقدرته انواع الجواهر العقلية ۰ و افاض برحمته محركات الاجرام الفلكية ۰ و الصلوة على ذوات الانفس القدسية ۰ المنزهة عن الكدورات الانسية ۰ خصوصا على محمد صاحب الآيات و المعجزات ۰ و على آله و اصحابه التابعين للحجج و البينات ۰

٢ و بعد فلما كان باتفاق اهل العقل ۰ و اطباق ذوى الفضل ۰ ان العلوم لاسيما اليقينية اعلى المطالب ۰ و ابهى المناقب ۰ و ان صاحبها اشرف الاشخاص البشرية ۰ و نفسه اسرع اتصالا بالعقول الملكية ۰ وكان الاطلاع على دقائقها ۰ و الاحاطة بكنه حقائقها ۰ لا يمكن الا بالعلم الموسوم بالمنطق اذ به يعرف صحيحها من سقيمها ۰ و غثيثها عن سمينها ۰ فاشار الي من سعد بلطف الحق ۰ و امتاز بتاييده من بين كافة الخلق ۰ و مال الى جنابه الداني و القاصي ۰ و افلح بمتابعته المطيع و العاصي ۰ و هو المولى الصدر الصاحب الاعظم الفاضل المقبل المقبول المنعم المحسن الحسيب النسيب ۰ ذو المناقب و المفاخر ۰ شمس الملة و الدين ۰ بهاء الاسلام و المسلمين ۰ ملك الصدور و الافاضل ۰ قدوة الاكابر و الاماثل ۰ قطب الاعالي ۰ فلك المعالي ۰ محمد بن المولى الصدر المعظم ۰ و الصاحب الاعظم دستور الآفاق ۰ آصف الزمان ۰ ملك وزراء الشرق و الغرب ۰ صاحب ديوان الممالك ۰ بهاء الملة و الدين ۰ علاء الاسلام و المسلمين ۰ قطب الملوك و السلاطين ۰ محمد ادام الله ظلالهما ۰ و ضاعف جلالهما ۰ الذي مع حداثة سنه فاق بالسعادات الابدية ۰ و المكرمات السرمدية ۰ و اختص بالفضائل الجميلة ۰ و الخصائل الحميدة ۰ بتحرير كتاب جامع لقواعده ۰ حاو لاصوله و ضوابطه ۰ فبادرت الى اشارته ۰ و شرعت

في ثبته و كتابته • ملتزمًا ان لا أخلّ بشيءٍ يُعتدّ به • مع زيادات شريفة ونكت لطيفة من عندي • متركًا للتقليد • متبعًا للحق الصريح الذي لايأتيه الباطل من بين يديه ولا من خلفه • وسمّيته بالرسالة الشمسيّة • في القواعد المنطقيّة • ورتّبته على مقدمة • وثلث مقالات وخاتمة • معتصمًا بحبل التوفيق من واهب العقل • ومتوكلًا على وجوده المفيض للخير والعدل • انّه خير موفّق ومعين •

امّا المقدمة ففيها بحثان * البحث الاول في ماهيّة المنطق وبيان الحاجة اليه *

٣ العلم امّا تصوّر فقط وهو حصول صورة الشيء في العقل او تصوّر معه حكم وهو اسناد امر الى آخر ايجابًا او سلبًا ويقال للمجموع تصديق •

٤ وليس الكلّ من كلّ منهما بديهيًا والّا لما جهلنا شيئًا ولا نظريًا والّا لدار او تسلسل •

٥ بل البعض من كلّ منهما بديهيٌّ والبعض نظريٌّ يحصل منه بالفكر وهو ترتيب امور معلومة للتأدي الى مجهول وذلك الترتيب ليس بصواب دائمًا لمناقضة بعض العقلاء بعضًا في مقتضى افكارهم بل الانسان الواحد يناقض نفسه في وقتين فمسّت الحاجة الى قانون يفيد معرفة طرق اكتساب النظريات من الضروريات والاحاطة بالصحيح والفاسد من الفكر الواقع فيها وهو المنطق ورسموه بانّه آلة قانونيّة تعصم مراعاتها الذهن عن الخطا في الفكر •

٦ وليس كلّه بديهيًا والّا لاستغني عن تعلّمه ولا نظريًا والّا لدار او تسلسل بل بعضه بديهيٌّ وبعضه نظريٌّ يستفاد منه •

البحث الثاني في موضوع المنطق

٧ موضوع كلّ علم ما يبحث فيه عن عوارضه التي تلحقه لما هو هو اي لذاته او لجزئه او لمايساويه وموضوع المنطق المعلومات التصوّريّة والتصديقيّة لانّ المنطقي يبحث عنها من حيث انّها توصل الى مجهول تصوّري او تصديقي ومن حيث يتوقّف عليها الموصل الى التصوّر ككونها كليّة او جزئيّة وذاتيّة او عرضيّة وجنسًا او فصلًا ومن حيث يتوقّف عليها الموصل الى التصديق امّا توقّفًا قريبًا ككونها قضيّة او عكس قضيّة او نقيض قضيّة وامّا توقّفًا بعيدًا ككونها موضوعات ومحمولات •

٨ وقد جرت العادة بان يسمّو الموصل الى التصوّر قولًا شارحًا والموصل الى التصديق حجّة ويجب

تقديم الاول على الثاني وضعاً لتقدم التصور على التصديق طبعاً لان كل تصديق لابد فيه من تصور المحكوم عليه بذاته او بامر صادق عليه والمحكوم به كذلك والحكم لامتناع الحكم ممن جهل احد هذه الامور *

اما المقالات فثلث * الاولى في المفردات وفيها اربعة فصول

الفصل الاول في الالفاظ

٩ دلالة اللفظ على المعنى بتوسط الوضع له مطابقة كدلالة الانسان على الحيوان الناطق وبتوسطه لما دخل فيه تضمن كدلالته على الحيوان وبتوسطه لما خرج عنه التزام كدلالته على قابل العلم وصنعة الكتابة *

١٠ ويشترط في الدلالة الالتزامية كون الخارجي بحالة يلزم من تصور المسمى في الذهن تصوره والا لامتنع فهمه من اللفظ ولا يشترط فيها كونه بحالة يلزم من تحقق المسمى في الخارج تحققه فيه كدلالة لفظ العمى على البصر مع عدم الملازمة بينهما في الخارج *

١١ والمطابقة لا تستلزم التضمن كما في البسائط واما استلزامها الالتزام فغير متيقن لان وجود لازم لكل ماهية يلزم من تصورها تصوره غير معلوم * وماقيل من ان تصور كل ماهية يستلزم تصور انها ليست غيرها فممنوع ومن هذا تبين عدم استلزام التضمن الالتزام واما هما فلا يوجدان الا مع المطابقة لاستحالة وجود التابع من حيث انه تابع بدون المتبوع *

١٢ والدال بالمطابقة ان قصد بجزئه الدلالة على جزء معناه فهو المركب كرامي الحجارة والا فهو المفرد وهو ان لم يصلح لان يخبر به وحده فهو الاداة كفي ولا وان صلح لذلك فان دل بهيئته على زمان معين من الازمنة الثلثة فهو الكلمة وان لم يدل فهو الاسم *

١٣ وحينئذ اما ان يكون معناه واحداً او كثيراً فان كان الاول فان تشخص ذلك المعنى يسمى علماً والا فمتواطياً ان استوت افراده الذهنية والخارجية فيه كالانسان والشمس ومشككا ان كان حصوله في البعض اولى واقدم من الآخر كالوجود بالنسبة الى الواجب والممكن وان كان الثاني فان كان وضعه لتلك المعاني على السوية فهو المشترك كالعين وان لم يكن كذلك بل وضع لاحدها ثم نقل الى الثاني وحينئذ ان ترك موضوعه الاول يسمى منقولاً عرفياً ان كان الناقل هو العرف العام كالدابة وشرعياً ان كان هو الشرع كالصلوة والصوم واصطلاحياً ان كان هو العرف الخاص كاصطلاحات النحاة والنظار

وَقَدْ يَكُونُ مُمْكِنَ الْوُجُودِ لَكِنْ لَا يُوجَدُ كَالْعَنْقَاءِ • وَقَدْ يَكُونُ الْمَوْجُودُ مِنْهُ وَاحِدًا فَقَطْ مَعَ امْتِنَاعِ غَيْرِهِ كَالْبَارِي تَعَالَى أَوْ مَعَ إِمْكَانِهِ كَالشَّمْسِ • وَقَدْ يَكُونُ الْمَوْجُودُ مِنْهُ كَثِيرًا إِمَّا مُتَنَاهِيًا كَالْكَوَاكِبِ السَّبْعَةِ السَّيَّارَةِ أَوْ غَيْرَ مُتَنَاهٍ كَالنُّفُوسِ النَّاطِقَةِ •

اَلثَّانِي

٢٦ إِذَا قُلْنَا لِلْحَيَوَانِ مَثَلًا بِأَنَّهُ كُلِّيٌّ فَهُنَاكَ أُمُورٌ ثَلَاثَةٌ اَلْحَيَوَانُ مِنْ حَيْثُ هُوَ هُوَ وَكَوْنُهُ كُلِّيًّا وَالْمُرَكَّبُ مِنْهُمَا وَالْأَوَّلُ يُسَمَّى كُلِّيًّا طَبِيعِيًّا وَالثَّانِي كُلِّيًّا مَنْطِقِيًّا وَالثَّالِثُ كُلِّيًّا عَقْلِيًّا • وَالْكُلِّيُّ الطَّبِيعِيُّ مَوْجُودٌ فِي الْخَارِجِ لِأَنَّهُ جُزْءٌ مِنْ هٰذَا الْحَيَوَانِ الْمَوْجُودِ فِي الْخَارِجِ وَجُزْءُ الْمَوْجُودِ مَوْجُودٌ • وَأَمَّا الْكُلِّيَّانِ الْأَخِيرَانِ فَفِي وُجُودِهِمَا فِي الْخَارِجِ خِلَافٌ وَالنَّظَرُ فِيهِ خَارِجٌ عَنِ الْمَنْطِقِ •

اَلثَّالِثُ

٢٧ اَلْكُلِّيَّانِ مُتَسَاوِيَانِ إِنْ صَدَقَ كُلُّ وَاحِدٍ مِنْهُمَا عَلَى كُلِّ مَا صَدَقَ عَلَيْهِ الْآخَرُ كَالْإِنْسَانِ وَالنَّاطِقِ • وَبَيْنَهُمَا عُمُومٌ وَخُصُوصٌ مُطْلَقًا إِنْ صَدَقَ أَحَدُهُمَا عَلَى كُلِّ مَا صَدَقَ عَلَيْهِ الْآخَرُ مِنْ غَيْرِ عَكْسٍ كَالْحَيَوَانِ وَالْإِنْسَانِ • وَبَيْنَهُمَا عُمُومٌ وَخُصُوصٌ مِنْ وَجْهٍ إِنْ صَدَقَ كُلٌّ مِنْهُمَا عَلَى بَعْضِ مَا صَدَقَ عَلَيْهِ الْآخَرُ فَقَطْ كَالْحَيَوَانِ وَالْأَبْيَضِ • وَمُتَبَايِنَانِ إِنْ لَمْ يَصْدُقْ شَيْءٌ مِنْهُمَا عَلَى شَيْءٍ مِمَّا يَصْدُقُ عَلَيْهِ الْآخَرُ كَالْإِنْسَانِ وَالْفَرَسِ •

٢٨ وَنَقِيضَا الْمُتَسَاوِيَيْنِ مُتَسَاوِيَانِ وَإِلَّا لَصَدَقَ أَحَدُهُمَا عَلَى مَا كَذَبَ عَلَيْهِ الْآخَرُ فَيَصْدُقُ أَحَدُ الْمُتَسَاوِيَيْنِ عَلَى مَا يَكْذِبُ عَلَيْهِ الْآخَرُ وَهُوَ مُحَالٌ • وَنَقِيضُ الْأَعَمِّ مِنْ شَيْءٍ مُطْلَقًا أَخَصُّ مِنْ نَقِيضِ الْأَخَصِّ مُطْلَقًا لِصِدْقِ نَقِيضِ الْأَخَصِّ عَلَى كُلِّ مَا يَصْدُقُ عَلَيْهِ نَقِيضُ الْأَعَمِّ مِنْ غَيْرِ عَكْسٍ • أَمَّا الْأَوَّلُ فَلِأَنَّهُ لَوْلَا ذٰلِكَ لَصَدَقَ عَيْنُ الْأَخَصِّ عَلَى بَعْضِ مَا يَصْدُقُ عَلَيْهِ نَقِيضُ الْأَعَمِّ وَذٰلِكَ مُسْتَلْزِمٌ لِصِدْقِ الْأَخَصِّ بِدُونِ الْأَعَمِّ وَهُوَ مُحَالٌ • وَأَمَّا الثَّانِي فَلِأَنَّهُ لَوْلَا ذٰلِكَ لَصَدَقَ نَقِيضُ الْأَعَمِّ عَلَى كُلِّ مَا يَصْدُقُ عَلَيْهِ نَقِيضُ الْأَخَصِّ وَذٰلِكَ مُسْتَلْزِمٌ لِصِدْقِ الْأَخَصِّ عَلَى كُلِّ الْأَعَمِّ وَهُوَ مُحَالٌ • وَالْأَعَمُّ مِنْ شَيْءٍ مِنْ وَجْهٍ لَيْسَ بَيْنَ نَقِيضَيْهِمَا عُمُومٌ أَصْلًا لِتَحَقُّقِ مِثْلِ هٰذَا الْعُمُومِ بَيْنَ عَيْنِ الْأَعَمِّ مُطْلَقًا وَنَقِيضِ الْأَخَصِّ مَعَ التَّبَايُنِ الْكُلِّيِّ بَيْنَ نَقِيضِ الْأَعَمِّ مُطْلَقًا وَعَيْنِ الْأَخَصِّ • وَنَقِيضَا الْمُتَبَايِنَيْنِ مُتَبَايِنَانِ تَبَايُنًا جُزْئِيًّا لِأَنَّهُمَا إِنْ لَمْ يَصْدُقَا مَعًا أَصْلًا كَاللَّا وُجُودِ

وَ اللاّ عدم كَانَ بَيْنَهُمَا تَبَايُنٌ كُلِّيٌّ وَإِنْ صَدَقَا مَعاً كَالْإِنْسَانِ وَ اللاّ فرس كَانَ بَيْنَهُمَا تَبَايُنٌ جُزْئِيٌّ ضَرُورَةَ صِدْقِ أَحَدِ الْمُتَبَايِنَيْنِ مَعَ نَقِيضِ الْآخَرِ فَقَطْ فَالتَّبَايُنُ الْجُزْئِيُّ لَازِمٌ جَزْماً •

اَلرَّابِعُ

٢٩ اَلْجُزْئِيُّ كَمَا يُقَالُ عَلَى الْمَعْنَى الْمَذْكُورِ الْمُسَمَّى بِالْحَقِيقِيِّ فَكَذَلِكَ يُقَالُ عَلَى كُلِّ أَخَصَّ تَحْتَ أَعَمَّ وَ يُسَمَّى الْجُزْئِيَّ الْإِضَافِيَّ • وَهُوَ أَعَمُّ مِنَ الْأَوَّلِ لِأَنَّ كُلَّ جُزْئِيٍّ حَقِيقِيٍّ فَهُوَ جُزْئِيٌّ إِضَافِيٌّ دُونَ الْعَكْسِ أَمَّا الْأَوَّلُ فَلِانْدِرَاجِ كُلِّ شَخْصٍ تَحْتَ الْمَاهِيَّةِ الْمُعَرَّاةِ عَنِ الْمُشَخِّصَاتِ وَأَمَّا الثَّانِي فَلِجَوَازِ كَوْنِ الْجُزْئِيِّ الْإِضَافِيِّ كُلِّيًّا وَ امْتِنَاعِ كَوْنِ الْجُزْئِيِّ الْحَقِيقِيِّ كَذَلِكَ •

اَلْخَامِسُ

٣٠ اَلنَّوْعُ كَمَا يُقَالُ عَلَى مَا ذَكَرْنَاهُ وَ يُقَالُ لَهُ النَّوْعُ الْحَقِيقِيُّ فَكَذَلِكَ يُقَالُ عَلَى كُلِّ مَاهِيَّةٍ يُقَالُ عَلَيْهَا وَ عَلَى غَيْرِهَا الْجِنْسُ فِي جَوَابِ مَا هُوَ قَوْلاً أَوَّلِيًّا وَ يُسَمَّى النَّوْعَ الْإِضَافِيَّ •

٣١ وَ مَرَاتِبُهُ أَرْبَعٌ لِأَنَّهُ إِمَّا أَعَمُّ الْأَنْوَاعِ وَهُوَ النَّوْعُ الْعَالِي كَالْجِسْمِ أَوْ أَخَصُّهَا وَهُوَ النَّوْعُ السَّافِلُ كَالْإِنْسَانِ وَ يُسَمَّى نَوْعَ الْأَنْوَاعِ أَوْ أَعَمُّ مِنَ السَّافِلِ وَ أَخَصُّ مِنَ الْعَالِي وَهُوَ النَّوْعُ الْمُتَوَسِّطُ كَالْحَيَوَانِ وَ الْجِسْمِ النَّامِي أَوْ مُبَايِنٌ لِلْكُلِّ وَ هُوَ النَّوْعُ الْمُفْرَدُ كَالْعَقْلِ إِنْ قُلْنَا إِنَّ الْجَوْهَرَ جِنْسٌ لَهُ •

٣٢ وَ مَرَاتِبُ الْأَجْنَاسِ أَيْضًا هَذِهِ الْأَرْبَعُ لَكِنَّ الْعَالِيَ كَالْجَوْهَرِ فِي مَرَاتِبِ الْأَجْنَاسِ يُسَمَّى جِنْسَ الْأَجْنَاسِ لَا السَّافِلِ كَالْحَيَوَانِ وَ مِثَالُ الْمُتَوَسِّطِ فِيهَا الْجِسْمُ النَّامِي وَالْجِسْمُ وَ مِثَالُ الْمُفْرَدِ الْعَقْلُ إِنْ قُلْنَا إِنَّ الْجَوْهَرَ لَيْسَ بِجِنْسٍ لَهُ •

٣٣ وَ النَّوْعُ الْإِضَافِيُّ مَوْجُودٌ بِدُونِ الْحَقِيقِيِّ كَالْأَنْوَاعِ الْمُتَوَسِّطَةِ وَالْحَقِيقِيُّ مَوْجُودٌ بِدُونِ الْإِضَافِيِّ كَالْحَقَائِقِ الْبَسِيطَةِ فَلَيْسَ بَيْنَهُمَا عُمُومٌ وَ خُصُوصٌ مُطْلَقًا بَلْ كُلٌّ مِنْهُمَا أَعَمُّ مِنَ الْآخَرِ مِنْ وَجْهٍ لِصِدْقِهِمَا عَلَى النَّوْعِ السَّافِلِ •

٣٤ وَ جُزْءُ الْمَقُولِ فِي جَوَابِ مَا هُوَ إِنْ كَانَ مَذْكُورًا بِالْمُطَابَقَةِ يُسَمَّى وَاقِعًا فِي طَرِيقِ مَا هُوَ كَالْحَيَوَانِ أَوِ النَّاطِقِ بِالنِّسْبَةِ إِلَى الْحَيَوَانِ النَّاطِقِ الْمَقُولِ فِي جَوَابِ السُّؤَالِ بِمَا هُوَ عَنِ الْإِنْسَانِ • وَإِنْ كَانَ مَذْكُورًا

بِالتَّضَمُّنِ يُسَمَّى دَاخِلاً فِي جَوَابِ مَا هُوَ كَالْجِسْمِ النَّامِي وَ الْحَسَّاسِ وَ الْمُتَحَرِّكِ بِالْإِرَادَةِ الدَّالِّ عَلَيْهَا الْحَيَوَانُ بِالتَّضَمُّنِ •

٣٥ وَالْجِنْسُ الْعَالِي جَازَ اَنْ يَكُونَ لَهُ فَصْلٌ يُقَوِّمُهُ لِجَوَازِ تَرَكُّبِهِ مِنْ اَمْرَيْنِ مُتَسَاوِيَيْنِ اَوْ اُمُورٍ مُتَسَاوِيَةٍ وَيَجِبُ اَنْ يَكُونَ لَهُ فَصْلٌ يُقَسِّمُهُ • وَ النَّوْعُ السَّافِلُ يَجِبُ اَنْ يَكُونَ لَهُ فَصْلٌ يُقَوِّمُهُ وَيَمْتَنِعُ اَنْ يَكُونَ لَهُ فَصْلٌ يُقَسِّمُهُ • وَالْمُتَوَسِّطَاتُ يَجِبُ اَنْ يَكُونَ لَهَا فُصُولٌ تُقَوِّمُهَا وَفُصُولٌ تُقَسِّمُهَا • وَكُلُّ فَصْلٍ يُقَوِّمُ الْعَالِيَ فَهُوَ يُقَوِّمُ السَّافِلَ مِنْ غَيْرِ عَكْسٍ كُلِّيٍّ وَكُلُّ فَصْلٍ يُقَسِّمُ السَّافِلَ فَهُوَ يُقَسِّمُ الْعَالِيَ مِنْ غَيْرِ عَكْسٍ كُلِّيٍّ •

اَلْفَصْلُ الرَّابِعُ فِي التَّعْرِيفَاتِ

٣٦ اَلْمُعَرِّفُ لِلشَّيْئِ هُوَ الَّذِي يَسْتَلْزِمُ تَصَوُّرُهُ تَصَوُّرَ ذٰلِكَ الشَّيْئِ اَوِ امْتِيَازَهُ عَنْ كُلِّ مَا عَدَاهُ • وَهُوَ لَا يَجُوزُ اَنْ يَكُونَ نَفْسَ الْمَاهِيَّةِ لِاَنَّ الْمُعَرِّفَ مَعْلُومٌ قَبْلَ الْمُعَرَّفِ وَالشَّيْئُ لَا يُعْلَمُ قَبْلَ نَفْسِهِ وَلَا اَعَمَّ لِقُصُورِهِ عَنْ اِفَادَةِ التَّعْرِيفِ وَلَا اَخَصَّ لِكَوْنِهِ اَخْفَى فَهُوَ مُسَاوِيهَا فِي الْعُمُومِ وَالْخُصُوصِ •

٣٧ وَيُسَمَّى حَدًّا تَامًّا اِنْ كَانَ بِالْجِنْسِ وَالْفَصْلِ الْقَرِيبَيْنِ • وَحَدًّا نَاقِصًا اِنْ كَانَ بِالْفَصْلِ الْقَرِيبِ وَحْدَهُ اَوْ بِهِ وَبِالْجِنْسِ الْبَعِيدِ • وَرَسْمًا تَامًّا اِنْ كَانَ بِالْجِنْسِ الْقَرِيبِ وَالْخَاصَّةِ • وَرَسْمًا نَاقِصًا اِنْ كَانَ بِالْخَاصَّةِ وَحْدَهَا اَوْ بِهَا وَبِالْجِنْسِ الْبَعِيدِ •

٣٨ وَيَجِبُ الْاِحْتِرَازُ عَنْ تَعْرِيفِ الشَّيْئِ بِمَا يُسَاوِيهِ فِي الْمَعْرِفَةِ وَ الْجَهَالَةِ كَتَعْرِيفِ الْحَرَكَةِ بِمَا لَيْسَ بِسُكُونٍ وَالزَّوْجِ بِمَا لَيْسَ بِفَرْدٍ وَعَنْ تَعْرِيفِ الشَّيْئِ بِمَا لَا يُعْرَفُ اِلَّا بِهِ سَوَاءٌ كَانَ بِمَرْتَبَةٍ وَاحِدَةٍ كَمَا يُقَالُ الْكَيْفِيَّةُ مَا بِهَا يَقَعُ الْمُشَابَهَةُ ثُمَّ يُقَالُ الْمُشَابَهَةُ اِتِّفَاقٌ فِي الْكَيْفِيَّةِ اَوْ بِمَرَاتِبَ كَمَا يُقَالُ الْاِثْنَانِ زَوْجٌ اَوَّلُ ثُمَّ يُقَالُ الزَّوْجُ هُوَ الْمُنْقَسِمُ بِمُتَسَاوِيَيْنِ ثُمَّ يُقَالُ الْمُتَسَاوِيَانِ هُمَا الشَّيْئَانِ اللَّذَانِ لَا يَفْضُلُ اَحَدُهُمَا عَلَى الْآخَرِ ثُمَّ يُقَالُ الشَّيْئَانِ هُمَا الْاِثْنَانِ • وَيَجِبُ اَنْ يُحْتَرَزَ عَنِ اسْتِعْمَالِ اَلْفَاظٍ غَرِيبَةٍ وَحْشِيَّةٍ غَيْرِ ظَاهِرَةِ الدَّلَالَةِ بِالْقِيَاسِ اِلَى السَّامِعِ لِكَوْنِهِ مُفَوِّتًا لِلْغَرَضِ •

المقالة الثانية

في القضايا وأحكامها وفيها مقدمة وثلثة فصول أما المقدمة ففي تعريف القضية وأقسامها الأولية

٣٩ القضية قول يصح أن يقال لقائله إنه صادق فيه أو كاذب وهي حملية إن انحلت بطرفيها إلى مفردين كقولنا زيد عالم وزيد ليس بعالم • وشرطية إن لم تنحل •

٤٠ والشرطية إما متصلة وهي التي يحكم فيها بصدق قضية أو لا صدقها على تقدير صدق قضية أخرى كقولنا إن كان هذا إنسانا فهو حيوان وليس إن كان هذا إنسانا فهو جماد وإما منفصلة وهي التي يحكم فيها بالتنافي بين القضيتين في الصدق والكذب معا أو في أحدهما فقط أو بنفيه كقولنا إما أن يكون هذا العدد زوجا أو فردا وليس إما أن يكون هذا الإنسان أسود أو كاتبا •

الفصل الأول في الحملية وفيه أربعة مباحث

البحث الأول في أجزائها وأقسامها *

٤١ والحملية إنما يتحقق بأجزاء ثلثة المحكوم عليه ويسمى موضوعا والمحكوم به ويسمى محمولا ونسبة بينهما بها يرتبط المحمول بالموضوع وتسمى نسبة حكمية واللفظ الدال عليها يسمى رابطة كهو في قولنا زيد هو قائم ويسمى القضية حينئذ ثلاثية • وقد يحذف الرابطة في بعض اللغات لشعور الذهن بمعناها فالقضية حينئذ تسمى ثنائية •

٤٢ وهذه النسبة إن كانت نسبة بها يصح أن يقال إن الموضوع محمول فالقضية موجبة كقولنا الإنسان حيوان وإن كانت نسبة بها يصح أن يقال إن الموضوع ليس بمحمول فالقضية سالبة كقولنا الإنسان ليس بحجر •

٤٣ وموضوع الحملية إن كان شخصا معينا سميت مخصوصة وشخصية • وإن كان كليا فإن بين فيها كمية أفراد ما صدق عليه الحكم ويسمى اللفظ الدال عليها سورا سميت محصورة ومسورة وهي أربع لأنه إن بين فيها أن الحكم على كل الأفراد فهي كلية وهي إما موجبة وسورها كل كقولنا كل نار حارة وإما سالبة وسورها لا شيء ولا واحد كقولنا لا شيء ولا واحد من الإنسان بجماد • وإن بين فيها أن الحكم

عَلى بَعضِ الأَفرادِ فَهِيَ جُزئيَّةٌ إمَّا مُوجِبَةٌ وَسُورُها بَعضُ وَواحِدٌ كَقَولِنا بَعضُ الحَيَوانِ أَو واحِدٌ مِنهُ إنسانٌ وإمَّا سالِبَةٌ وَسُورُها لَيسَ كُلُّ وَلَيسَ بَعضُ وَبَعضُ لَيسَ كَقَولِنا لَيسَ كُلُّ حَيَوانٍ إنسانًا وَلَيسَ بَعضُ الحَيَوانِ بِإنسانٍ وَبَعضُ الحَيَوانِ لَيسَ بِإنسانٍ • وَإن لَم يُبَيَّن فيها كَمِّيَّةُ الأَفرادِ فَإن لَم تَصلُحْ لِأَن تَصدُقَ كُلِّيَّةً وَجُزئيَّةً سُمِّيَتِ القَضِيَّةُ طَبعِيَّةً كَقَولِنا الحَيَوانُ جِنسٌ وَالإنسانُ نَوعٌ • وَإن صَلُحَت لِذٰلِكَ سُمِّيَت مُهمَلَةً كَقَولِنا الإنسانُ في خُسرٍ وَالإنسانُ لَيسَ في خُسرٍ وَهِيَ في قُوَّةِ الجُزئيَّةِ لِأَنَّهُ مَتى صَدَقَ الإنسانُ في خُسرٍ صَدَقَ بَعضُ الإنسانِ في خُسرٍ وَبِالعَكسِ •

اَلبَحثُ الثّاني في تَحقيقِ المَحصوراتِ الأَربَعِ

٤٤ قَولُنا كُلُّ جَ بَ تُستَعمَلُ تارَةً بِحَسَبِ الحَقيقَةِ وَمَعناهُ أَنَّ كُلَّ ما لَو وُجِدَ كانَ جَ مِنَ الأَفرادِ المُمكِنَةِ فَهُوَ بِحَيثُ لَو وُجِدَ كانَ بَ أَي كُلُّ ما هُوَ مَلزومُ جَ فَهُوَ مَلزومُ بَ وَتارَةً بِحَسَبِ الخارِجِ وَمَعناهُ كُلُّ جَ فِي الخارِجِ سَواءٌ كانَ حالَ الحُكمِ أَو قَبلَهُ أَو بَعدَهُ فَهُوَ بَ فِي الخارِجِ • وَالفَرقُ بَينَ الاعتِبارَينِ ظاهِرٌ فَإنَّهُ لَو لَم يوجَد شَيءٌ مِنَ المُرَبَّعاتِ فِي الخارِجِ لَصَحَّ أَن يُقالَ كُلُّ مُرَبَّعٍ شَكلٌ بِالاعتِبارِ الأَوَّلِ دونَ الثّاني وَلَو لَم يوجَد مِنَ الأَشكالِ فِي الخارِجِ إلَّا المُرَبَّعُ لَصَحَّ أَن يُقالَ كُلُّ شَكلٍ مُرَبَّعٌ بِالاعتِبارِ الثّاني دونَ الأَوَّلِ • وَعَلى هٰذا فَقِسِ المَحصوراتِ الباقِيَةَ •

اَلبَحثُ الثّالِثُ فِي العُدولِ وَالتَّحصيلِ

٤٥ حَرفُ السَّلبِ إن كانَ جُزءًا مِنَ المَوضوعِ كَقَولِنا اللّاحَيُّ جَمادٌ أَو مِنَ المَحمولِ كَقَولِنا الجَمادُ لا عالِمٌ أَو مِنهُما جَميعًا سُمِّيَتِ القَضِيَّةُ مَعدولَةً مُوجِبَةً كانَت أَو سالِبَةً وَإن لَم يَكُن جُزءَ شَيءٍ مِنهُما سُمِّيَت مُحَصَّلَةً إن كانَت مُوجِبَةً وَبَسيطَةً إن كانَت سالِبَةً •

٤٦ وَالاعتِبارُ بِإيجابِ القَضِيَّةِ وَسَلبِها بِالنِّسبَةِ الثُّبوتِيَّةِ وَالسَّلبِيَّةِ لا بِطَرَفَيِ القَضِيَّةِ فَإنَّ قَولَنا كُلُّ ما لَيسَ بِحَيٍّ فَهُوَ لا عالِمٌ مُوجِبَةٌ مَعَ أَنَّ طَرَفَيها عَدَمِيّانِ وَقَولَنا لا شَيءَ مِنَ المُتَحَرِّكِ بِساكِنٍ سالِبَةٌ مَعَ أَنَّ طَرَفَيها وُجودِيّانِ •

٤٧ وَالسّالِبَةُ البَسيطَةُ أَعَمُّ مِنَ المُوجِبَةِ المَعدولَةِ المَحمولِ لِصِدقِ السَّلبِ عِندَ عَدَمِ المَوضوعِ

دُونَ الْإِيجَابِ فَإِنَّ الْإِيجَابَ لَا يَصِحُّ إِلَّا عَلَى مَوْجُودٍ مُحَقَّقٍ كَمَا فِي الْخَارِجِيَّةِ الْمَوْضُوعِ أَوْ مُقَدَّرٍ كَمَا فِي الْحَقِيقِيَّةِ الْمَوْضُوعِ أَمَّا إِذَا كَانَ الْمَوْضُوعُ مَوْجُودًا فَإِنَّهُمَا مُتَلَازِمَانِ • وَالْفَرْقُ بَيْنَهُمَا فِي اللَّفْظِ أَمَّا فِي الثُّلَاثِيَّةِ فَالْقَضِيَّةُ مُوجِبَةٌ إِنْ قُدِّمَتِ الرَّابِطَةُ عَلَى حَرْفِ السَّلْبِ وَسَالِبَةٌ إِنْ أُخِّرَتْ عَنْهَا وَأَمَّا فِي الثُّنَائِيَّةِ فَبِالنِّيَّةِ أَوْ بِالْاِصْطِلَاحِ عَلَى تَخْصِيصِ لَفْظِ غَيْرٍ أَوْلَا بِالْإِيجَابِ الْمَعْدُولِ وَلَفْظِ لَيْسَ بِالسَّلْبِ الْبَسِيطِ أَوْ بِالْعَكْسِ

اَلْبَحْثُ الرَّابِعُ فِي الْقَضَايَا الْمُوَجَّهَةِ

٤٨ لَابُدَّ لِنِسْبَةِ الْمَحْمُولَاتِ إِلَى الْمَوْضُوعَاتِ مِنْ كَيْفِيَّةٍ إِيجَابِيَّةً كَانَتِ النِّسْبَةُ أَوْ سَلْبِيَّةً كَالضَّرُورَةِ وَالدَّوَامِ وَاللَّاضَرُورَةِ وَاللَّادَوَامِ وَتُسَمَّى تِلْكَ الْكَيْفِيَّةُ مَادَّةَ الْقَضِيَّةِ وَاللَّفْظُ الدَّالُّ عَلَيْهَا يُسَمَّى جِهَةَ الْقَضِيَّةِ •

٤٩ وَالْقَضَايَا الْمُوَجَّهَةُ الَّتِي جَرَتِ الْعَادَةُ بِالْبَحْثِ عَنْهَا وَعَنْ أَحْكَامِهَا ثَلٰثَ عَشْرَةَ قَضِيَّةً مِنْهَا بَسِيطَةٌ وَهِيَ الَّتِي حَقِيقَتُهَا إِيجَابٌ فَقَطْ أَوْ سَلْبٌ فَقَطْ وَمِنْهَا مُرَكَّبَةٌ وَهِيَ الَّتِي حَقِيقَتُهَا تَرَكَّبَتْ مِنْ إِيجَابٍ وَسَلْبٍ مَعًا •

٥٠ أَمَّا الْبَسَائِطُ فَسِتٌّ

اَلْأُولَى

الضَّرُورِيَّةُ الْمُطْلَقَةُ وَهِيَ الَّتِي تُحْكَمُ فِيهَا بِضَرُورَةِ ثُبُوتِ الْمَحْمُولِ لِلْمَوْضُوعِ أَوْ سَلْبِهِ عَنْهُ مَا دَامَ ذَاتُ الْمَوْضُوعِ مَوْجُودَةً كَقَوْلِنَا بِالضَّرُورَةِ كُلُّ إِنْسَانٍ حَيَوَانٌ وَبِالضَّرُورَةِ لَا شَيْءَ مِنَ الْإِنْسَانِ بِحَجَرٍ •

اَلثَّانِيَةُ

الدَّائِمَةُ الْمُطْلَقَةُ وَهِيَ الَّتِي تُحْكَمُ فِيهَا بِدَوَامِ ثُبُوتِ الْمَحْمُولِ لِلْمَوْضُوعِ أَوْ سَلْبِهِ عَنْهُ مَا دَامَ ذَاتُ الْمَوْضُوعِ مَوْجُودَةً وَمِثَالُهَا إِيجَابًا وَسَلْبًا مَا مَرَّ •

اَلثَّالِثَةُ

الْمَشْرُوطَةُ الْعَامَّةُ وَهِيَ الَّتِي تُحْكَمُ فِيهَا بِضَرُورَةِ ثُبُوتِ الْمَحْمُولِ لِلْمَوْضُوعِ أَوْ سَلْبِهِ عَنْهُ

بِشَرْطِ وَصْفِ الْمَوْضُوعِ كَقَوْلِنَا بِالضَّرُورَةِ كُلُّ كَاتِبٍ مُتَحَرِّكُ الْاَصَابِعِ مَا دَامَ كَاتِبًا وَبِالضَّرُورَةِ لَاشَيْئَ مِنَ الْكَاتِبِ بِسَاكِنِ الْاَصَابِعِ مَا دَامَ كَاتِبًا •

اَلرَّابِعَةُ

اَلْعُرْفِيَّةُ الْعَامَّةُ وَهِيَ الَّتِي تَحْكُمُ فِيهَا بِدَوَامِ ثُبُوتِ الْمَحْمُولِ لِلْمَوْضُوعِ اَوْ سَلْبِهِ عَنْهُ بِشَرْطِ وَصْفِ الْمَوْضُوعِ وَمِثَالُهَا اِيجَابًا وَسَلْبًا مَامَرَّ •

اَلْخَامِسَةُ

اَلْمُطْلَقَةُ الْعَامَّةُ وَهِيَ الَّتِي تَحْكُمُ فِيهَا بِثُبُوتِ الْمَحْمُولِ لِلْمَوْضُوعِ اَوْ سَلْبِهِ عَنْهُ بِالْفِعْلِ كَقَوْلِنَا بِالْاِطْلَاقِ الْعَامِّ كُلُّ اِنْسَانٍ مُتَنَفِّسٌ وَبِالْاِطْلَاقِ الْعَامِّ لَاشَيْئَ مِنَ الْاِنْسَانِ بِمُتَنَفِّسٍ •

اَلسَّادِسَةُ

اَلْمُمْكِنَةُ الْعَامَّةُ وَهِيَ الَّتِي تَحْكُمُ فِيهَا بِارْتِفَاعِ الضَّرُورَةِ الْمُطْلَقَةِ عَنِ الْجَانِبِ الْمُخَالِفِ لِلْحُكْمِ كَقَوْلِنَا بِالْاِمْكَانِ الْعَامِّ كُلُّ نَارٍ حَارَّةٌ وَبِالْاِمْكَانِ الْعَامِّ لَاشَيْئَ مِنَ الْحَارِّ بِبَارِدٍ •

٤١ وَاَمَّا الْمُرَكَّبَاتُ فَسَبْعٌ

اَلْاُولٰى

اَلْمَشْرُوطَةُ الْخَاصَّةُ وَهِيَ الْمَشْرُوطَةُ الْعَامَّةُ مَعَ قَيْدِ اللَّادَوَامِ بِحَسَبِ الذَّاتِ وَهِيَ اِنْ كَانَتْ مُوجِبَةً كَقَوْلِنَا بِالضَّرُورَةِ كُلُّ كَاتِبٍ مُتَحَرِّكُ الْاَصَابِعِ مَا دَامَ كَاتِبًا لَا دَائِمًا فَتَرْكِيبُهَا مِنْ مُوجِبَةٍ مَشْرُوطَةٍ عَامَّةٍ وَسَالِبَةٍ مُطْلَقَةٍ عَامَّةٍ وَاِنْ كَانَتْ سَالِبَةً كَقَوْلِنَا بِالضَّرُورَةِ لَا شَيْئَ مِنَ الْكَاتِبِ بِسَاكِنِ الْاَصَابِعِ مَا دَامَ كَاتِبًا لَا دَائِمًا فَتَرْكِيبُهَا مِنْ سَالِبَةٍ مَشْرُوطَةٍ عَامَّةٍ وَمُوجِبَةٍ مُطْلَقَةٍ عَامَّةٍ •

اَلثَّانِيَةُ

اَلْعُرْفِيَّةُ الْخَاصَّةُ وَهِيَ الْعُرْفِيَّةُ الْعَامَّةُ مَعَ قَيْدِ اللَّادَوَامِ بِحَسَبِ الذَّاتِ وَهِيَ اِنْ كَانَتْ مُوجِبَةً فَتَرْكِيبُهَا مِنْ مُوجِبَةٍ عُرْفِيَّةٍ عَامَّةٍ وَسَالِبَةٍ مُطْلَقَةٍ عَامَّةٍ وَاِنْ كَانَتْ سَالِبَةً فَتَرْكِيبُهَا مِنْ سَالِبَةٍ عُرْفِيَّةٍ عَامَّةٍ وَمُوجِبَةٍ مُطْلَقَةٍ عَامَّةٍ وَمِثَالُهَا اِيجَابًا وَسَلْبًا مَامَرَّ •

الثالثة

الوجودية اللاضرورية وهي المطلقة العامة مع قيد اللاضرورة بحسب الذات وهي إن كانت موجبة كقولنا كل إنسان ضاحك بالفعل لا بالضرورة فتركيبها من موجبة مطلقة عامة وسالبة ممكنة عامة وإن كانت سالبة كقولنا لا شيء من الإنسان بضاحك بالفعل لا بالضرورة فتركيبها من سالبة مطلقة عامة وموجبة ممكنة عامة .

الرابعة

الوجودية اللادائمة وهي المطلقة العامة مع قيد اللادوام بحسب الذات وهي سواء كانت موجبة أو سالبة فتركيبها من مطلقتين عامتين إحداهما موجبة و الأخرى سالبة و مثالها إيجابا وسلبا ما مر .

الخامسة

الوقتية وهي التي تحكم فيها بضرورة ثبوت المحمول للموضوع أو سلبه عنه في وقت معين من أوقات وجود الموضوع مقيدا باللادوام بحسب الذات وهي إن كانت موجبة كقولنا بالضرورة كل قمر منخسف وقت حيلولة الارض بينه وبين الشمس لا دائما فتركيبها من موجبة وقتية مطلقة وسالبة مطلقة عامة وإن كانت سالبة كقولنا بالضرورة لا شيء من القمر بمنخسف وقت التربيع لا دائما فتركيبها من سالبة وقتية مطلقة وموجبة مطلقة عامة .

السادسة

المنتشرة وهي التي تحكم فيها بضرورة ثبوت المحمول للموضوع أو سلبه عنه في وقت غير معين من أوقات وجود الموضوع مقيدا باللادوام بحسب الذات وهي إنكانت موجبة كقولنا بالضرورة كل إنسان متنفس في وقت ما لا دائما فتركيبها من موجبة منتشرة مطلقة وسالبة مطلقة عامة و إن كانت سالبة كقولنا بالضرورة لا شيء من الانسان بمتنفس في وقت ما لا دائما فتركيبها من سالبة منتشرة مطلقة وموجبة مطلقة عامة .

السابعة

الممكنة الخاصة وهي التي تحكم فيها بارتفاع الضرورة المطلقة عن جانبي الوجود و العدم جميعا وهو سواء كانت موجبة كقولنا بالامكان الخاص كل انسان كاتب او سالبة كقولنا بالامكان الخاص لا شيئ من الانسان بكاتب فتركيبها من ممكنتين عامتين احدهما موجبة و الاخرى سالبة و الضابطة فيها ان اللادوام اشارة الى مطلقة عامة و اللاضرورة الى ممكنة عامة مخالفتي الكيفية موافقتي الكمية للقضية المقيدة بهما ٭

الفصل الثاني في اقسام الشرطية

٥٢ الجزء الاول منها يسمى مقدما و الثاني تاليا وهي اما متصلة او منفصلة اما المتصلة فاما لزومية وهي التي يكون فيها صدق التالي على تقدير صدق المقدم لعلاقة بينهما توجب ذلك كالعلية و التضايف و اما اتفاقية وهي التي يكون فيها ذلك لمجرد توافق الجزئين على الصدق كقولنا ان كان الانسان ناطقا فالحمار ناهق ٭

٥٣ و اما المنفصلة فاما حقيقية وهي التي تحكم فيها بالتنافي بين جزئيها في الصدق و الكذب معا كقولنا اما ان يكون هذا العدد زوجا او فردا و اما مانعة الجمع وهي التي تحكم فيها بالتنافي بين الجزئين في الصدق فقط كقولنا اما ان يكون هذا الشيئ حجرا او شجرا و اما مانعة الخلو وهي التي تحكم فيها بالتنافي بين الجزئين في الكذب فقط كقولنا اما ان يكون زيد في البحر او لا يغرق ٭ وكل واحد من هذه الثلثة اما عنادية وهي التي يكون التنافي فيها لذاتي الجزئين كما في الامثلة المذكورة و اما اتفاقية وهي التي يكون التنافي فيها بمجرد الاتفاق كقولنا للاسود اللا كاتب اما ان يكون هذا اسود او كاتبا حقيقية او لا اسود او كاتبا مانعة الجمع او اسود او لا كاتبا مانعة الخلو ٭

٥٤ و سالبة كل واحدة من هذه القضايا الثمان هي التي يرفع فيها ما حكم به في موجبتها فسالبة اللزوم تسمى سالبة لزومية و سالبة العناد تسمى سالبة عنادية و سالبة الاتفاق تسمى سالبة اتفاقية ٭

٥٥ و المتصلة الموجبة تصدق عن صادقين و عن كاذبين و عن مجهول الصدق و الكذب و عن مقدم كاذب و تال صادق دون العكس لامتناع استلزام الصادق الكاذب و تكذب عن جزئين كاذبين و عن مقدم كاذب و تال صادق و بالعكس و عن صادقين هذا اذا كانت لزومية و اما اذا كانت

اتفاقيّة فكذبها عن صادقين محال • والمنفصلة الموجبة الحقيقيّة تصدق عن صادق وكاذب وتكذب عن صادقين وعن كاذبين ومانعة الجمع تصدق عن كاذبين وعن صادق وكاذب وتكذب عن صادقين ومانعة الخلوّ تصدق عن صادقين وعن صادق وكاذب وتكذب عن كاذبين • والسالبة تصدق عمّا تكذب عنه الموجبة وتكذب عمّا تصدق عنه الموجبة •

٥٦ وكلّيّة الشرطيّة ان يكون التالي لازماً او معانداً للمقدّم على جميع الاوضاع التي يمكن حصوله معها وهي الاوضاع التي تحصل له بسبب اقتران الامور التي يمكن اجتماعها معه والجزئيّة ان تكون كذلك على بعض هذه الاوضاع والمخصوصة ان تكون كذلك على وضع معيّن • وسور الموجبة الكلّيّة في المتّصلة كلّما ومهما ومتى وفي المنفصلة دائماً وسور السالبة الكلّيّة فيهما ليس البتّة وسور الموجبة الجزئيّة فيهما قد يكون والسالبة الجزئيّة فيهما قد لا يكون وبادخال حرف السلب على سور الايجاب الكلّي والمهملة باطلاق لفظ لو وان واذا في المتّصلة وامّا واو في المنفصلة •

٥٧ والشرطيّة قد تتركّب عن حمليّتين وعن متّصلتين وعن منفصلتين وعن حمليّة ومتّصلة وعن حمليّة ومنفصلة وعن متّصلة ومنفصلة • وكلّ واحدة من هذه الثلثة الاخيرة في المتّصلة تنقسم الى قسمين لامتياز مقدّمها عن تاليها بالطبع بخلاف المنفصلة فانّ مقدّمها انّما يتميّز عن تاليها بالوضع فقط فاقسام المتّصلة تسعة والمنفصلة ستّة وامّا الامثلة فعليك باستخراجها عن نفسك •

الفصل الثالث في احكام القضايا وفيه اربعة مباحث

البحث الاوّل في التناقض

٥٨ وحدّه بانّه اختلاف قضيّتين بالايجاب والسلب بحيث يقتضي لذاته ان يكون احدهما صادقة والاخرى كاذبة •

٥٩ ولا يتحقّق التناقض في المخصوصتين الّا عند اتّحاد الموضوع ويندرج فيه وحدة الشرط والجزء والكلّ وعند اتّحاد المحمول ويندرج فيه وحدة الزمان والمكان والاضافة والقوّة والفعل •

وَفِي المَحْصُورَتَيْنِ لَابُدَّ مَعَ ذٰلِكَ مِنَ الاِخْتِلَافِ بِالكَمِّيَّةِ لِصِدْقِ الجُزْئِيَّتَيْنِ وَكِذْبِ الكُلِّيَّتَيْنِ فِي كُلِّ مَادَّةٍ يَكُونُ المَوْضُوعُ فِيهَا أَعَمَّ مِنَ المَحْمُولِ وَلَابُدَّ مِنَ الاِخْتِلَافِ بِالجِهَةِ فِي الكُلِّ لِصِدْقِ المُمْكِنَتَيْنِ وَكِذْبِ الضَّرُورِيَّتَيْنِ فِي مَادَّةِ الإِمْكَانِ ٠

٦٠ فَنَقِيضُ الضَّرُورِيَّةِ المُطْلَقَةِ المُمْكِنَةُ العَامَّةُ لِأَنَّ سَلْبَ الضَّرُورَةِ مَعَ الضَّرُورَةِ مِمَّا يَتَنَاقَضَانِ جَزْمًا ٠ وَنَقِيضُ الدَّائِمَةِ المُطْلَقَةِ المُطْلَقَةُ العَامَّةُ لِأَنَّ السَّلْبَ فِي كُلِّ الأَوْقَاتِ يُنَافِيهِ الإِيجَابُ فِي البَعْضِ وَبِالعَكْسِ ٠ وَنَقِيضُ المَشْرُوطَةِ العَامَّةِ الحِينِيَّةُ المُمْكِنَةُ أَعْنِي الَّتِي حُكِمَ فِيهَا بِرَفْعِ الضَّرُورَةِ بِحَسَبِ الوَصْفِ عَنِ الجَانِبِ المُخَالِفِ كَقَوْلِنَا كُلُّ مَنْ بِهِ ذَاتُ الجَنْبِ يُمْكِنُ أَنْ يَسْعُلَ فِي بَعْضِ أَوْقَاتِ كَوْنِهِ مَجْنُوبًا ٠ وَنَقِيضُ العُرْفِيَّةِ العَامَّةِ الحِينِيَّةُ المُطْلَقَةُ أَعْنِي الَّتِي حُكِمَ فِيهَا بِثُبُوتِ المَحْمُولِ لِلْمَوْضُوعِ أَوْ سَلْبِهِ عَنْهُ فِي بَعْضِ أَحْيَانِ وَصْفِ المَوْضُوعِ وَمِثَالُهَا مَا مَرَّ ٠

٦١ وَأَمَّا المُرَكَّبَاتُ فَإِنْ كَانَتْ كُلِّيَّةً فَنَقِيضُهَا أَحَدُ نَقِيضَيْ جُزْئَيْهَا وَذٰلِكَ جَلِيٌّ بَعْدَ الإِحَاطَةِ بِحَقَائِقِ المُرَكَّبَاتِ وَنَقَائِضِ البَسَائِطِ فَإِنَّكَ إِذَا تَحَقَّقْتَ أَنَّ الوُجُودِيَّةَ اللَّادَائِمَةَ تَرْكِيبُهَا مِنْ مُطْلَقَتَيْنِ عَامَّتَيْنِ إِحْدَاهُمَا مُوجِبَةٌ وَالأُخْرَى سَالِبَةٌ وَأَنَّ نَقِيضَ المُطْلَقَةِ هُوَ الدَّائِمَةُ تَحَقَّقْتَ أَنَّ نَقِيضَهَا إِمَّا الدَّائِمَةُ المُخَالِفَةُ أَوِ الدَّائِمَةُ المُوَافِقَةُ ٠ وَإِنْ كَانَتْ جُزْئِيَّةً فَلَا يَكْفِي فِي نَقِيضِهَا مَا ذَكَرْنَاهُ لِأَنَّهُ يَكْذِبُ بَعْضُ الجِسْمِ حَيَوَانٌ لَا دَائِمًا مَعَ كِذْبِ كُلِّ وَاحِدٍ مِنْ نَقِيضَيْ جُزْئَيْهَا بَلِ الحَقُّ فِي نَقِيضِهَا أَنْ يُرَدَّدَ بَيْنَ نَقِيضَيِ الجُزْئَيْنِ لِكُلِّ وَاحِدٍ وَاحِدٍ أَيْ كُلُّ وَاحِدٍ وَاحِدٍ لَا يَخْلُو عَنْ نَقِيضِهِمَا فَيُقَالُ كُلُّ وَاحِدٍ وَاحِدٍ مِنْ أَفْرَادِ الجِسْمِ إِمَّا حَيَوَانٌ دَائِمًا أَوْ لَيْسَ بِحَيَوَانٍ دَائِمًا ٠

٦٢ وَأَمَّا الشَّرْطِيَّةُ فَنَقِيضُ الكُلِّيَّةِ مِنْهَا الجُزْئِيَّةُ المُوَافِقَةُ فِي الجِنْسِ وَالنَّوْعِ وَالمُخَالِفَةُ فِي الكَيْفِ وَالكَمِّ وَبِالعَكْسِ ٠

المَبْحَثُ الثَّانِي فِي العَكْسِ المُسْتَوِي

وَهُوَ عِبَارَةٌ عَنْ جَعْلِ الجُزْءِ الأَوَّلِ مِنَ القَضِيَّةِ ثَانِيًا وَالثَّانِي أَوَّلًا مَعَ بَقَاءِ الصِّدْقِ وَالكَيْفِ بِحَالِهِمَا ٠

٦٣ أَمَّا السَّوَالِبُ فَإِنْ كَانَتْ كُلِّيَّةً فَسَبْعٌ مِنْهَا وَهِيَ الوَقْتِيَّتَانِ وَالوُجُودِيَّتَانِ وَالمُمْكِنَتَانِ وَالمُطْلَقَةُ العَامَّةُ لَا تَنْعَكِسُ لِامْتِنَاعِ العَكْسِ فِي أَخَصِّهَا وَهِيَ الوَقْتِيَّةُ لِصِدْقِ قَوْلِنَا بِالضَّرُورَةِ لَا شَيْءَ مِنَ القَمَرِ بِمُنْخَسِفٍ

وقت التربيع لا دائما وكذب قولنا بعض المنخسف ليس بقمر بالامكان العام الذي هو اعم الجهات لان كل منخسف فهو قمر بالضرورة واذا لم ينعكس الاخص لم ينعكس الاعم اذ لو انعكس الاعم لانعكس الاخص لان لازم الاعم لازم الاخص ضرورة •

٦٤ اما الضرورية والدائمة المطلقتان فتنعكسان دائمة كلية لانه اذا صدق بالضرورة او دائما لا شيء من ج ب فدائما لا شيء من ب ج والا فبعض ب ج بالاطلاق العام وهو مع الاصل ينتج بعض ب ليس ب بالضرورة في الضرورية ودائما في الدائمة وهو محال •

٦٥ واما المشروطة والعرفية العامتان فتنعكسان عرفية عامة كلية لانه اذا صدق بالضرورة او دائما لا شيء من ج ب مادام ج فدائما لا شيء من ب ج مادام ب والا فبعض ب ج حين هو ب وهو مع الاصل ينتج بعض ب ليس ب حين هو ب وهو محال • واما المشروطة والعرفية الخاصتان فتنعكسان عرفية عامة لا دائمة في البعض اما العرفية العامة فلكونها لازمة للعامتين واما اللا دوام في البعض فلانه لو كذب بعض ب ج بالاطلاق العام لصدق لا شيء من ب ج دائما فتنعكس الى لا شيء من ب ج دائما وقد كان كل ج ب بالفعل هذا خلف •

٦٦ وان كانت جزئية فالمشروطة والعرفية الخاصتان تنعكسان عرفية خاصة لانه اذا صدق بالضرورة او دائما بعض ج ليس ب مادام ج لا دائما صدق دائما بعض ب ليس ج مادام ب لا دائما لانا نفرض ذات الموضوع وهو ج د فد ج بالفعل ود ب ايضا للادوام سلب الباء عنه وليس ج مادام ب والا لكان ج حين هو ب فب حين هو ج وقد كان ليس ب مادام ج هذا خلف واذا صدق الجيم والباء عليه وتنافيا فيه صدق بعض ب ليس ج ما دام ب لا دائما وهو المطلوب • واما البواقي فلا تنعكس لانه يصدق بالضرورة بعض الحيوان ليس بانسان وبالضرورة بعض القمر ليس بمنخسف وقت التربيع لا دائما مع كذب عكسها بالامكان العام لكن الضرورية اخص البسائط والوقتية اخص المركبات الباقية ومتى لم تنعكسا لم ينعكس شيء منها لما عرفت ان انعكاس العام مستلزم لانعكاس الخاص •

٦٧ واما الموجبة كلية كانت او جزئية فلا تنعكس كلية اصلا لاحتمال كون المحمول اعم من الموضوع كقولنا كل انسان حيوان واما في الجهة فالضرورية والدائمة والعامتان تنعكس حينية مطلقة لانه اذا

صَدَقَ كُلُّ جَ بَ بِإِحْدَى الْجِهَاتِ الْأَرْبَعِ الْمَذْكُورَةِ فَبَعْضُ بَ جَ حِينَ هُوَ بَ وَإِلَّا فَلَا شَيْئَ مِنْ بَ جَ مَادَامَ بَ وَهُوَ مَعَ الْأَصْلِ يُنْتِجُ لَا شَيْئَ مِنْ جَ جَ بِالضَّرُورَةِ أَوْ دَائِمًا فِي الضَّرُورِيَّةِ وَالدَّائِمَةِ وَمَادَامَ جَ فِي الْعَامَّتَيْنِ وَهُوَ مُحَالٌ وَأَمَّا الْخَاصَّتَانِ فَتَنْعَكِسَانِ حِينِيَّةً مُطْلَقَةً مُقَيَّدَةً بِاللَّادَوَامِ أَمَّا الْحِينِيَّةُ الْمُطْلَقَةُ فَلِكَوْنِهَا لَازِمَةً لِعَامَّتَيْهِمَا وَأَمَّا قَيْدُ اللَّادَوَامِ فِي الْأَصْلِ الْكُلِّيِّ فَلِأَنَّهُ لَوْ كَذَبَ بَعْضُ بَ لَيْسَ جَ بِالْفِعْلِ لَصَدَقَ كُلُّ بَ جَ دَائِمًا فَنَضُمُّهُ إِلَى الْجُزْءِ الْأَوَّلِ مِنَ الْأَصْلِ وَهُوَ قَوْلُنَا بِالضَّرُورَةِ أَوْ دَائِمًا كُلُّ جَ بَ مَادَامَ جَ يُنْتِجُ كُلُّ بَ بَ دَائِمًا فَنَضُمُّهُ إِلَى الْجُزْءِ الثَّانِي أَيْضًا وَهُوَ قَوْلُنَا لَا شَيْئَ مِنْ جَ بَ بِالْإِطْلَاقِ الْعَامِّ يُنْتِجُ لَا شَيْئَ مِنْ بَ بَ بِالْإِطْلَاقِ الْعَامِّ فَيَلْزَمُ اجْتِمَاعُ النَّقِيضَيْنِ وَهُوَ مُحَالٌ • وَأَمَّا فِي الْجُزْئِيِّ فَنَفْرِضُ الْمَوْضُوعَ دَ فَهُوَ لَيْسَ جَ بِالْفِعْلِ وَإِلَّا لَكَانَ جَ دَائِمًا فَبَ دَائِمًا لِدَوَامِ الْبَاءِ بِدَوَامِ الْجِيمِ لَكِنَّ اللَّازِمَ بَاطِلٌ لِتَقْيِيدِ الْأَصْلِ بِاللَّادَوَامِ وَأَمَّا الْوَقْتِيَّتَانِ وَالْوُجُودِيَّتَانِ وَالْمُطْلَقَةُ الْعَامَّةُ فَتَنْعَكِسُ مُطْلَقَةً عَامَّةً لِأَنَّهُ إِذَا صَدَقَ كُلُّ جَ بَ بِإِحْدَى الْجِهَاتِ الْخَمْسِ الْمَذْكُورَةِ فَبَعْضُ بَ جَ بِالْإِطْلَاقِ الْعَامِّ وَإِلَّا لَصَدَقَ لَا شَيْئَ مِنْ بَ جَ دَائِمًا وَهُوَ مَعَ الْأَصْلِ يُنْتِجُ لَا شَيْئَ مِنْ جَ جَ دَائِمًا وَهُوَ مُحَالٌ وَإِنْ شِئْتَ عَكَسْتَ نَقِيضَ الْعَكْسِ فِي الْمُوجِبَاتِ لِيَصْدُقَ نَقِيضُ الْأَصْلِ أَوِ الْأَخَصُّ مِنْهُ •

٦٨ وَأَمَّا الْمُمْكِنَتَانِ فَحَالُهُمَا فِي الْانْعِكَاسِ وَعَدَمِهِ غَيْرُ مَعْلُومٍ لِتَوَقُّفِ الْبُرْهَانِ الْمَذْكُورِ لِلْانْعِكَاسِ فِيهِمَا عَلَى انْعِكَاسِ السَّالِبَةِ الضَّرُورِيَّةِ كَنَفْسِهَا أَوْ عَلَى إِنْتَاجِ الصُّغْرَى الْمُمْكِنَةِ مَعَ الْكُبْرَى الضَّرُورِيَّةِ فِي الشَّكْلِ الْأَوَّلِ وَالثَّالِثِ الَّذَيْنِ كُلٌّ مِنْهُمَا غَيْرُ مُتَحَقِّقٍ وَلِعَدَمِ الظَّفَرِ بِدَلِيلٍ يُوجِبُ الْانْعِكَاسَ وَعَدَمَهُ • وَأَمَّا الشَّرْطِيَّةُ فَالْمُتَّصِلَةُ الْمُوجِبَةُ تَنْعَكِسُ مُوجِبَةً جُزْئِيَّةً وَالسَّالِبَةُ الْكُلِّيَّةُ سَالِبَةً كُلِّيَّةً إِذْ لَوْ صَدَقَ نَقِيضُ الْعَكْسِ لَانْضَمَّ مَعَ الْأَصْلِ قِيَاسًا مُنْتِجًا لِلْمُحَالِ وَأَمَّا السَّالِبَةُ الْجُزْئِيَّةُ فَلَا تَنْعَكِسُ لِصِدْقِ قَوْلِنَا قَدْ لَا يَكُونُ إِذَا كَانَ هٰذَا حَيَوَانًا فَهُوَ إِنْسَانٌ مَعَ كِذْبِ الْعَكْسِ وَأَمَّا الْمُنْفَصِلَةُ فَلَا يُتَصَوَّرُ فِيهَا الْعَكْسُ لِعَدَمِ الْامْتِيَازِ بَيْنَ جُزْئَيْهَا بِالطَّبْعِ •

اَلْبَحْثُ الثَّالِثُ فِي عَكْسِ النَّقِيضِ

٦٩ وَهُوَ عِبَارَةٌ عَنْ جَعْلِ الْجُزْءِ الْأَوَّلِ مِنَ الْقَضِيَّةِ نَقِيضَ الثَّانِي وَالثَّانِي عَيْنَ الْأَوَّلِ مَعَ مُخَالَفَةِ الْأَصْلِ فِي الْكَيْفِ وَمُوَافَقَتِهِ فِي الصِّدْقِ •

٧٠ وَأَمَّا الْمُوجِبَاتُ فَإِنْ كَانَتْ كُلِّيَّةً فَسَبْعٌ مِنْهَا وَهِيَ الَّتِي لَا تَنْعَكِسُ سَوَالِبُهَا بِالْعَكْسِ الْمُسْتَوِي لَا تَنْعَكِسُ لِأَنَّهُ يَصْدُقُ بِالضَّرُورَةِ كُلُّ قَمَرٍ فَهُوَ لَيْسَ بِمُنْخَسِفٍ وَقْتَ التَّرْبِيعِ لَا دَائِمًا دُونَ عَكْسِهِ لِمَا عَرَفْتَ وَتَنْعَكِسُ الضَّرُورِيَّةُ وَالدَّائِمَةُ دَائِمَةً كُلِّيَّةً لِأَنَّهُ إِذَا صَدَقَ بِالضَّرُورَةِ أَوْ دَائِمًا كُلُّ ج ب فَدَائِمًا لَا شَيْءَ مِمَّا لَيْسَ ب ج وَإِلَّا فَبَعْضُ مَا لَيْسَ ب فَهُوَ ج بِالْفِعْلِ وَهُوَ مَعَ الْأَصْلِ يُنْتِجُ بَعْضُ مَا لَيْسَ ب فَهُوَ ب بِالضَّرُورَةِ فِي الضَّرُورِيَّةِ وَدَائِمًا فِي الدَّائِمَةِ وَهُوَ مُحَالٌ • وَأَمَّا الْمَشْرُوطَةُ وَالْعُرْفِيَّةُ الْعَامَّتَانِ فَتَنْعَكِسَانِ عُرْفِيَّةً عَامَّةً كُلِّيَّةً لِأَنَّهُ إِذَا صَدَقَ بِالضَّرُورَةِ أَوْ دَائِمًا كُلُّ ج ب مَا دَامَ ج فَدَائِمًا لَا شَيْءَ مِمَّا لَيْسَ ب ج مَا دَامَ لَيْسَ ب وَإِلَّا فَبَعْضُ مَا لَيْسَ ب فَهُوَ ج حِينَ هُوَ لَيْسَ ب وَهُوَ مَعَ الْأَصْلِ يُنْتِجُ بَعْضُ مَا لَيْسَ ب فَهُوَ ب حِينَ هُوَ لَيْسَ ب وَهُوَ مُحَالٌ • وَأَمَّا الْخَاصَّتَانِ فَتَنْعَكِسَانِ عُرْفِيَّةً عَامَّةً لَا دَائِمَةً فِي الْبَعْضِ أَمَّا الْعُرْفِيَّةُ الْعَامَّةُ فَلِاسْتِلْزَامِ الْعَامَّتَيْنِ إِيَّاهَا وَأَمَّا اللَّادَوَامُ فِي الْبَعْضِ فَلِأَنَّهُ يَصْدُقُ بَعْضُ مَا لَيْسَ ب فَهُوَ ج بِالْإِطْلَاقِ الْعَامِّ وَإِلَّا فَلَا شَيْءَ مِمَّا لَيْسَ ب ج دَائِمًا فَتَنْعَكِسُ إِلَى لَا شَيْءَ مِنْ ج لَيْسَ ب دَائِمًا وَقَدْ كَانَ لَا شَيْءَ مِنْ ج ب بِالْفِعْلِ بِحُكْمِ اللَّادَوَامِ فِي الْأَصْلِ وَيَلْزَمُهُ كُلُّ ج فَهُوَ لَيْسَ ب بِالْفِعْلِ لِوُجُودِ الْمَوْضُوعِ هٰذَا خُلْفٌ •

٧١ وَإِنْ كَانَتْ جُزْئِيَّةً فَالْخَاصَّتَانِ تَنْعَكِسَانِ عُرْفِيَّةً خَاصَّةً لِأَنَّهُ إِذَا صَدَقَ بِالضَّرُورَةِ أَوْ دَائِمًا بَعْضُ ج ب مَا دَامَ ج لَا دَائِمًا وَجَبَ أَنْ يَصْدُقَ بَعْضُ مَا لَيْسَ ب لَيْسَ ج مَا دَامَ لَيْسَ ب لَا دَائِمًا لِأَنَّا نَفْرِضُ ذَاتَ الْمَوْضُوعِ وَهُوَ ج د فَدَ لَيْسَ ب بِالْفِعْلِ لِلَادَوَامِ ثُبُوتِ الْبَاءِ لَهُ وَلَيْسَ ج مَا دَامَ لَيْسَ ب وَإِلَّا لَكَانَ ج حِينَ هُوَ لَيْسَ ب فَلَيْسَ ب حِينَ هُوَ ج وَقَدْ كَانَ ب مَا دَامَ ج هٰذَا خُلْفٌ وَدَ ج بِالْفِعْلِ وَهُوَ ظَاهِرٌ فَبَعْضُ مَا لَيْسَ ب لَيْسَ ج مَادَامَ لَيْسَ ب لَا دَائِمًا وَهُوَ الْمَطْلُوبُ • وَأَمَّا الْبَوَاقِي فَلَا تَنْعَكِسُ لِصِدْقِ قَوْلِنَا بَعْضُ الْحَيَوَانِ لَيْسَ بِإِنْسَانٍ بِالضَّرُورَةِ الْمُطْلَقَةِ وَبَعْضُ الْقَمَرِ هُوَ لَيْسَ بِمُنْخَسِفٍ بِالضَّرُورَةِ الْوَقْتِيَّةِ دُونَ عَكْسِهِمَا بِأَعَمِّ الْجِهَاتِ وَمَتَى لَمْ تَنْعَكِسَا لَمْ تَنْعَكِسْ شَيْءٌ مِنْهَا لِمَا عَرَفْتَ فِي الْعَكْسِ الْمُسْتَوِي •

٧٢ وَأَمَّا السَّوَالِبُ كُلِّيَّةً كَانَتْ أَوْ جُزْئِيَّةً فَلَا تَنْعَكِسُ كُلِّيَّةً لِاحْتِمَالِ كَوْنِ نَقِيضِ الْمَحْمُولِ أَعَمَّ مِنَ الْمَوْضُوعِ وَتَنْعَكِسُ الْخَاصَّتَانِ حِينِيَّةً مُطْلَقَةً لِأَنَّهُ إِذَا صَدَقَ بِالضَّرُورَةِ أَوْ دَائِمًا لَا شَيْءَ مِنْ ج ب مَادَامَ

ج لا دائمًا نفرض الموضوع د فهو ليس ب بالفعل و د ج في بعض اوقات كونه ليس ب لانه ليس ب في جميع اوقات ج فبعض ما ليس ب فهو ج في بعض احيان ليس ب وهو المدعى • واما الوقتيتان و الوجوديتان تنعكس مطلقة عامة لانه اذا صدق لا شيئ من ج ب باحدى هذه الجهات نفرض الموضوع د فهو ليس ب بالفعل و ج بالفعل لوجود الموضوع فبعض ما ليس ب فهو ج بالفعل وهو المطلوب وهكذا بين عكوس جزئياتها • واما بواقي السوالب والشرطية موجبة كانت او سالبة فغير معلومة الانعكاس لعدم الظفر بالبرهان •

البحث الرابع في تلازم الشرطيات

٧٣ اما المتصلة الموجبة الكلية فتستلزم منفصلة مانعة الجمع من عين المقدم ونقيض التالي ومانعة الخلو من نقيض المقدم وعين التالي متعاكسين عليها والا لبطل اللزوم والاتصال والمنفصلة الحقيقية تستلزم اربع متصلات مقدم اثنين عين احد الجزئين وتاليهما نقيض الآخر ومقدم آخرين نقيض احد الجزئين وتاليهما عين الآخر وكل واحدة من غير الحقيقية مستلزمة للاخرى مركبة من نقيض الجزئين•

المقالة الثالثة في القياس وفيها خمسة فصول

الفصل الاول في تعريف القياس واقسامه

٧٤ القياس قول مؤلف من قضايا اذا سلمت لزم عنها لذاتها قول آخر •

٧٥ وهو استثنائي إن كان عين النتيجة او نقيضها مذكورا فيه بالفعل كقولنا ان كان هذا جسمًا فهو متحيز وهو بعينه مذكور فيه و لو قلنا لكنه ليس بمتحيز ينتج انه ليس بجسم و نقيضه مذكور فيه و اقتراني ان لم يكن كذلك كقولنا كل جسم مؤلف و كل مؤلف حادث ينتج كل جسم حادث و ليس هو ولا نقيضه مذكورا فيه بالفعل •

٧٦ و موضوع المطلوب يسمى اصغر و محموله اكبر والقضية التي جعلت جزء قياس تسمى مقدمة و المقدمة التي فيها الاصغر الصغرى و التي فيها الاكبر الكبرى و المكرر بينهما حدا اوسط و اقتران الصغرى بالكبرى يسمى قرينة و ضربا و الهيئة الحاصلة من كيفية وضع الحد الاوسط عند الحدين

الآخرين يسمى شكلا وهو اربعة لان الاوسط ان كان محمولا في الصغرى وموضوعا في الكبرى فهو الشكل الاول وان كان محمولا فيهما فهو الشكل الثاني وان كان موضوعا فيهما فهو الشكل الثالث وان كان موضوعا في الصغرى ومحمولا في الكبرى فهو الشكل الرابع •

٧٧ اما الشكل الاول فشرطه ايجاب الصغرى والا لم يندرج الاصغر في الاوسط وكلية الكبرى والا لاحتمل ان يكون البعض المحكوم عليه بالاكبر غير البعض المحكوم به على الاصغر • وضروبه الناتجة اربعة • الاول من موجبتين كليتين ينتج موجبة كلية كقولنا كل ج ب وكل ب ا فكل ج ا • الثاني من كليتين والصغرى موجبة والكبرى سالبة ينتج سالبة كلية كقولنا كل ج ب ولا شيء من ب ا فلا شيء من ج ا • الثالث من موجبتين والصغرى جزئية ينتج موجبة جزئية كقولنا بعض ج ب وكل ب ا فبعض ج ا • الرابع من موجبة جزئية صغرى وسالبة كلية كبرى ينتج سالبة جزئية كقولنا بعض ج ب ولا شيء من ب ا فبعض ج ليس ا ونتائج هذا الشكل بينة بذاتها •

٧٨ واما الشكل الثاني فشرطه اختلاف مقدمتيه بالكيف وكلية الكبرى والا يحصل الاختلاف الموجب لعدم الانتاج وهو صدق القياس مع ايجاب النتيجة تارة ومع سلبها اخرى • وضروبه الناتجة ايضا اربعة • الاول من كليتين والصغرى موجبة ينتج سالبة كلية كقولنا كل ج ب ولا شيء من ا ب فلا شيء من ج ا بالخلف وهو ضم نقيض النتيجة الى الكبرى لينتج نقيض الصغرى وبانعكاس الكبرى ليرتد الى الشكل الاول • الثاني من كليتين والكبرى موجبة ينتج سالبة كلية كقولنا لا شيء من ج ب وكل ا ب فلا شيء من ج ا بالخلف وبعكس الصغرى وجعلها كبرى ثم عكس النتيجة • الثالث من موجبة جزئية صغرى وسالبة كلية كبرى ينتج سالبة جزئية كقولنا بعض ج ب ولا شيء من ا ب فليس بعض ج ا بالخلف وبعكس الكبرى ليرجع الى الاول وبفرض موضوع الجزئية د فكل د ب ولا شيء من ا ب فلا شيء من د ا ثم نقول بعض ج د ولا شيء من د ا فبعض ج ليس ا • الرابع من سالبة جزئية صغرى وموجبة كلية كبرى ينتج سالبة جزئية كقولنا بعض ج ليس ب وكل ا ب فبعض ج ليس ا بالخلف والافتراض ان كانت السالبة مركبة •

٧٩ اما الشكل الثالث فشرطه ايجاب الصغرى والا يحصل الاختلاف وكلية احدى مقدمتيه

وَإِلَّا لَكَانَ الْبَعْضُ الْمَحْكُومُ عَلَيْهِ بِالْأَصْغَرِ غَيْرَ الْبَعْضِ الْمَحْكُومِ عَلَيْهِ بِالْأَكْبَرِ فَلَمْ يَجِبِ التَّعْدِيَةُ • وَضُرُوبُهُ النَّاتِجَةُ سِتَّةٌ • اَلْأَوَّلُ مِنْ مُوجِبَتَيْنِ كُلِّيَّتَيْنِ يُنْتِجُ مُوجِبَةً جُزْئِيَّةً كَقَوْلِنَا كُلُّ ب ج وَكُلُّ ب ا فَبَعْضُ ج ا بِالْخُلْفِ وَهُوَ ضَمُّ نَقِيضِ النَّتِيجَةِ إِلَى الصُّغْرَى لِيُنْتِجَ نَقِيضَ الْكُبْرَى وَبِالرَّدِّ إِلَى الْأَوَّلِ بِعَكْسِ الصُّغْرَى • اَلثَّانِي مِنْ كُلِّيَّتَيْنِ وَالْكُبْرَى سَالِبَةٌ يُنْتِجُ سَالِبَةً جُزْئِيَّةً كَقَوْلِنَا كُلُّ ج ب وَلَا شَيْءَ مِنْ ب ا فَبَعْضُ ج لَيْسَ ا بِالْخُلْفِ وَبِعَكْسِ الصُّغْرَى • اَلثَّالِثُ مِنْ مُوجِبَتَيْنِ وَالْكُبْرَى كُلِّيَّةٌ يُنْتِجُ مُوجِبَةً جُزْئِيَّةً كَقَوْلِنَا بَعْضُ ب ج وَكُلُّ ب ا فَبَعْضُ ج ا بِالْخُلْفِ وَبِعَكْسِ الصُّغْرَى وَبِفَرْضِ مَوْضُوعِ الْجُزْئِيَّةِ د فَكُلُّ د ب وَكُلُّ ب ا فَكُلُّ د ا ثُمَّ نَقُولُ د ج وَكُلُّ د ا فَبَعْضُ ج ا وَهُوَ الْمَطْلُوبُ • اَلرَّابِعُ مِنْ مُوجِبَةٍ جُزْئِيَّةٍ صُغْرَى وَسَالِبَةٍ كُلِّيَّةٍ كُبْرَى يُنْتِجُ سَالِبَةً جُزْئِيَّةً كَقَوْلِنَا بَعْضُ ب ج وَلَا شَيْءَ مِنْ ب ا فَبَعْضُ ج لَيْسَ ا بِالْخُلْفِ وَبِعَكْسِ الصُّغْرَى وَالْافْتِرَاضِ • اَلْخَامِسُ مِنْ مُوجِبَتَيْنِ وَالصُّغْرَى كُلِّيَّةٌ يُنْتِجُ مُوجِبَةً جُزْئِيَّةً كَقَوْلِنَا كُلُّ ب ج وَبَعْضُ ب ا فَبَعْضُ ج ا بِالْخُلْفِ وَبِعَكْسِ الْكُبْرَى وَجَعْلِهَا صُغْرَى ثُمَّ عَكْسِ النَّتِيجَةِ وَالْافْتِرَاضِ • اَلسَّادِسُ مِنْ مُوجِبَةٍ كُلِّيَّةٍ صُغْرَى وَسَالِبَةٍ جُزْئِيَّةٍ كُبْرَى يُنْتِجُ سَالِبَةً جُزْئِيَّةً كَقَوْلِنَا كُلُّ ب ج وَبَعْضُ ب لَيْسَ ا فَبَعْضُ ج لَيْسَ ا بِالْخُلْفِ وَالْافْتِرَاضِ إِنْ كَانَتْ سَالِبَةً مُرَكَّبَةً •

٨٠ وَأَمَّا الشَّكْلُ الرَّابِعُ فَشَرْطُهُ بِحَسَبِ الْكَمِّيَّةِ وَالْكَيْفِيَّةِ إِيجَابُ الْمُقَدِّمَتَيْنِ مَعَ كُلِّيَّةِ الصُّغْرَى وَاخْتِلَافُهُمَا بِالْكَيْفِ مَعَ كُلِّيَّةِ إِحْدَاهُمَا وَإِلَّا يَحْصُلُ الْاخْتِلَافُ الْمُوجِبُ لِعَدَمِ الْإِنْتَاجِ • وَضُرُوبُهُ النَّاتِجَةُ ثَمَانِيَةٌ • اَلْأَوَّلُ مِنْ مُوجِبَتَيْنِ كُلِّيَّتَيْنِ يُنْتِجُ مُوجِبَةً جُزْئِيَّةً كَقَوْلِنَا كُلُّ ب ج وَكُلُّ ا ب فَبَعْضُ ج ا بِعَكْسِ التَّرْتِيبِ ثُمَّ عَكْسِ النَّتِيجَةِ • اَلثَّانِي مِنْ مُوجِبَتَيْنِ وَالْكُبْرَى جُزْئِيَّةٌ يُنْتِجُ مُوجِبَةً جُزْئِيَّةً كَقَوْلِنَا كُلُّ ب ج وَبَعْضُ ا ب فَبَعْضُ ج ا لِمَا مَرَّ • اَلثَّالِثُ مِنْ كُلِّيَّتَيْنِ وَالصُّغْرَى سَالِبَةٌ يُنْتِجُ سَالِبَةً كُلِّيَّةً كَقَوْلِنَا لَا شَيْءَ مِنْ ب ج وَكُلُّ ا ب فَلَا شَيْءَ مِنْ ج ا لِمَا مَرَّ • اَلرَّابِعُ مِنْ كُلِّيَّتَيْنِ وَالصُّغْرَى مُوجِبَةٌ يُنْتِجُ سَالِبَةً جُزْئِيَّةً كَقَوْلِنَا كُلُّ ب ج وَلَا شَيْءَ مِنْ ا ب فَبَعْضُ ج لَيْسَ ا بِعَكْسِ الْمُقَدِّمَتَيْنِ • اَلْخَامِسُ مِنْ مُوجِبَةٍ جُزْئِيَّةٍ صُغْرَى وَسَالِبَةٍ كُلِّيَّةٍ كُبْرَى يُنْتِجُ سَالِبَةً جُزْئِيَّةً كَقَوْلِنَا بَعْضُ ب ج وَلَا شَيْءَ مِنْ ا ب فَبَعْضُ ج لَيْسَ ا لِمَا مَرَّ آنِفًا • اَلسَّادِسُ مِنْ سَالِبَةٍ جُزْئِيَّةٍ صُغْرَى وَمُوجِبَةٍ كُلِّيَّةٍ كُبْرَى يُنْتِجُ سَالِبَةً جُزْئِيَّةً كَقَوْلِنَا

بعض ب ليس ج وكل ا ب فبعض ج ليس ا بعكس الصغرى ليرتد الى الثاني • السابع من موجبة كلية صغرى و سالبة جزئية كبرى ينتج سالبة جزئية كقولنا كل ب ج وبعض ا ليس ب فبعض ج ليس ا بعكس الكبرى ليرتد الى الثالث • الثامن من سالبة كلية صغرى وموجبة جزئية كبرى ينتج سالبة جزئية كقولنا لا شيء من ب ج وبعض ا ب فبعض ج ليس ا بعكس الترتيب ثم عكس النتيجة • و يمكن بيان الخمسة الاول بالخلف وهو ضم نقيض النتيجة الى احدى المقدمتين لينتج ما ينعكس الى نقيض الاخرى و الثاني و الخامس بالافتراض و بيّن ذلك في الثاني ليقاس عليه الخامس وليكن البعض الذي هو ا د فكل د ا وكل د ب فنقول كل ب ج وكل د ب فبعض ج د وكل د ا فبعض ج ا وهو المطلوب • و المتقدمون حصروا الضروب الناتجة في الخمسة الاول و ذكروا لعدم انتاج الثلثة الاخيرة الاختلاف في القياس من بسيطتين و نحن نشترط كون السالبة فيهما من احدى الخاصتين فيسقط ما ذكروه من الاختلاف •

الفصل الثاني في المختلطات

٨١ اما الشكل الاول فشرطه بحسب الجهة فعلية الصغرى و النتيجة فيه كالكبرى انكانت غير المشروطتين و العرفيتين و الا فكالصغرى محذوفا عنها قيد اللاضرورة واللادوام و الضرورة المخصوصة بالصغرى انكانت الكبرى احدى العامتين و بعد ضم اللادوام اليها انكانت احدى الخاصتين •

٨٢ و اما الشكل الثاني فشرطه بحسب الجهة امران احدهما صدق الدوام على الصغرى او كون الكبرى من القضايا المنعكسة السوالب • و الثاني ان لا تستعمل الممكنة الا مع الضرورية المطلقة او مع الكبريين المشروطتين و النتيجة دائمة ان صدق الدوام على احدى مقدمتيه و الا فكالصغرى محذوفا عنها قيد اللادوام و اللاضرورة و الضرورة اية ضرورة كانت •

٨٣ و اما الشكل الثالث فشرطه فعلية الصغرى و النتيجة كالكبرى انكانت الكبرى غير الاربع و الا فكعكس الصغرى محذوفا عنه اللادوام انكانت الكبرى احدى العامتين و مضموما اليه انكانت احدى الخاصتين •

٨٤ و اما الشكل الرابع فشرط انتاجه بحسب الجهة امور خمسة • الاول كون القياس فيه من

الفعليّات • اَلثّاني اِنعكاس السّالبة المستعملة فيه • اَلثّالث صدق الدّوام على صغرى الضّرب الثّالث او العرفيّ العامّ على الكبرى • الرّابع كون الكبرى في السّادس من المنعكسة السّوالب • اَلخامس كون الصّغرى في الثّامن اِحدى الخاصّتين والكبرى ممّا يصدق عليها العرفيّ العامّ • والنّتيجة في الضّربين الاوّلين بعكس الصّغرى ان صدق الدّوام عليها او كان القياس من السّتّ المنعكسة السّوالب والّا فمطلقة عامّة وفي الضّرب الثّالث دائمة ان صدق الدّوام على احدى مقدّمتيه والّا فعكس الصّغرى وفي الرّابع والخامس دائمة ان صدق الدّوام على الكبرى والّا فعكس الصّغرى محذوفا عنه اللادوام وفي السّادس كما في الشّكل الثّاني بعد عكس الصّغرى وفي السّابع كما في الشّكل الثّالث بعد عكس الكبرى وفي الثّامن كعكس النّتيجة بعد عكس التّرتيب •

الفصل الثّالث في الاقترانيّات الكائنة من الشّرطيّات

وهي خمسة اقسام

٨٥ القسم الاوّل ما يتركّب من المتّصلات والمطبوع منه ما كانت الشّركة في جزء تامّ من المقدّمتين وتنعقد الاشكال الاربعة فيه لانّه ان كان تاليا في الصّغرى مقدّما في الكبرى فهو الشّكل الاوّل وان كان تاليا فيهما فهو الشّكل الثّاني وان كان مقدّما فيهما فهو الشّكل الثّالث وان كان مقدّما في الصّغرى تاليا في الكبرى فهو الشّكل الرّابع وشرائط الانتاج وعدد الضّروب والنّتيجة في الكمّيّة والكيفيّة في كلّ شكل كما في الحمليّات من غير فرق مثال الضّرب الاوّل كلّما كان ا ب فج د وكلّما كان ج د فه ز ينتج كلّما كان ا ب فه ز •

٨٦ القسم الثّاني ما يتركّب من المنفصلات والمطبوع منه ما كانت الشّركة في جزء غير تامّ من المقدّمتين كقولنا دائما امّا كلّ ا ب او كلّ ج د وامّا كلّ د ه او كلّ د ز ينتج امّا كلّ ا ب او كلّ ج ه او كلّ د ز لامتناع خلوّ الواقع عن مقدّمتي التّاليف وعن احد الاخريين فتنعقد فيه الاشكال الاربعة والشّرائط المعتبرة بين الحمليّتين معتبرة ههنا بين المتشاركين •

٨٨ القسم الثّالث ما يتركّب من الحمليّة والمتّصلة والمطبوع منه ما كانت الحمليّة كبرى

وَالشَّرِكَةُ مَعَ تَالِي الْمُتَّصِلَةِ وَنَتِيجَتُهُ مُتَّصِلَةٌ مُقَدَّمُهَا مُقَدَّمُ الْمُتَّصِلَةِ وَتَالِيهَا نَتِيجَةُ التَّأْلِيفِ بَيْنَ التَّالِي وَالْحَمْلِيَّةِ كَقَوْلِنَا كُلَّمَا كَانَ ا ب فَجـ د وَكُلُّ د ه يُنْتِجُ كُلَّمَا كَانَ ا ب فَكُلُّ جـ ه . وَتَنْعَقِدُ فِيهِ الْأَشْكَالُ الْأَرْبَعَةُ وَالشَّرَائِطُ الْمُعْتَبَرَةُ بَيْنَ الْحَمْلِيَّتَيْنِ مُعْتَبَرَةٌ هٰهُنَا بَيْنَ التَّالِي وَالْحَمْلِيَّةِ .

٨٨ الْقِسْمُ الرَّابِعُ مَا يَتَرَكَّبُ مِنَ الْحَمْلِيَّةِ وَالْمُنْفَصِلَةِ وَهُوَ عَلَى قِسْمَيْنِ . الْأَوَّلُ أَنْ يَكُونَ عَدَدُ الْحَمْلِيَّاتِ بِعَدَدِ الْانْفِصَالِ يُشَارِكُ كُلُّ وَاحِدٍ مِنْهَا وَاحِدًا مِنْ أَجْزَاءِ الْانْفِصَالِ إِمَّا مَعَ اتِّحَادِ التَّأْلِيفِ فِي النَّتِيجَةِ كَقَوْلِنَا كُلُّ جـ إِمَّا ب وَإِمَّا د وَإِمَّا ه وَكُلُّ ب ط وَكُلُّ د ط وَكُلُّ ه ط يُنْتِجُ كُلُّ جـ ط لِصِدْقِ أَجْزَاءِ الْانْفِصَالِ مَعَ مَا يُشَارِكُهُ مِنَ الْحَمْلِيَّةِ وَإِمَّا مَعَ اخْتِلَافِ التَّأْلِيفِ فِي النَّتِيجَةِ كَقَوْلِنَا كُلُّ جـ إِمَّا ب وَإِمَّا د وَإِمَّا ه وَكُلُّ ب جـ وَكُلُّ د ط وَكُلُّ ه ز يُنْتِجُ كُلُّ جـ إِمَّا جـ وَإِمَّا ط وَإِمَّا ز لِمَا مَرَّ . الثَّانِي أَنْ يَكُونَ الْحَمْلِيَّاتُ أَقَلَّ مِنْ أَجْزَاءِ الْانْفِصَالِ وَلْيَكُنِ الْحَمْلِيَّةُ ذَاتَ جُزْءٍ وَاحِدٍ وَالْمُنْفَصِلَةُ ذَاتَ جُزْئَيْنِ وَالْمُشَارَكَةُ مَعَ أَحَدِهِمَا كَقَوْلِنَا إِمَّا كُلُّ ا ط أَوْ كُلُّ حـ ب وَكُلُّ ب د يُنْتِجُ إِمَّا كُلُّ ا ط أَوْ كُلُّ حـ د لِامْتِنَاعِ خُلُوِّ الْوَاقِعِ عَنْ مُقَدِّمَتَيِ التَّأْلِيفِ وَعَنِ الْجُزْءِ الْغَيْرِ الْمُشَارِكِ .

٨٩ الْقِسْمُ الْخَامِسُ مَا يَتَرَكَّبُ مِنَ الْمُتَّصِلَةِ وَالْمُنْفَصِلَةِ وَالْاشْتِرَاكُ إِمَّا فِي جُزْءٍ تَامٍّ مِنَ الْمُقَدِّمَتَيْنِ أَوْ غَيْرِ تَامٍّ مِنْهُمَا وَكَيْفَ مَا كَانَ فَالْمَطْبُوعُ مِنْهُ مَا تَكُونُ الْمُتَّصِلَةُ صُغْرَى وَالْمُنْفَصِلَةُ كُبْرَى مِثَالُ الْأَوَّلِ قَوْلُنَا كُلَّمَا كَانَ ا ب فَجـ د وَدَائِمًا إِمَّا كُلُّ جـ د أَوْ ه ز يُنْتِجُ دَائِمًا إِمَّا أَنْ يَكُونَ ا ب أَوْ ه ز مَانِعَةَ الْجَمْعِ لِاسْتِلْزَامِ امْتِنَاعِ الْاجْتِمَاعِ مَعَ اللَّازِمِ دَائِمًا أَوْ فِي الْجُمْلَةِ امْتِنَاعَهُ مَعَ الْمَلْزُومِ دَائِمًا أَوْ فِي الْجُمْلَةِ وَمَانِعَةُ الْخُلُوِّ تُنْتِجُ قَدْ يَكُونُ إِذَا لَمْ يَكُنْ ا ب فَه ز لِاسْتِلْزَامِ نَقِيضِ الْأَوْسَطِ لِلطَّرَفَيْنِ اسْتِلْزَامًا كُلِّيًّا وَاسْتِلْزَامُ ذٰلِكَ الْمَطْلُوبَ مِنَ الثَّالِثِ مِثَالُ الثَّانِي كُلَّمَا كَانَ ا ب فَكُلُّ جـ د وَدَائِمًا إِمَّا كُلُّ د ه أَوْ د ز مَانِعَةُ الْخُلُوِّ يُنْتِجُ كُلَّمَا كَانَ ا ب فَإِمَّا كُلُّ جـ ه أَوْ د ز .

الْفَصْلُ الرَّابِعُ فِي الْقِيَاسِ الْاسْتِثْنَائِيِّ

٩٠ وَهُوَ مُرَكَّبٌ مِنْ مُقَدِّمَتَيْنِ إِحْدَاهُمَا شَرْطِيَّةٌ وَالْأُخْرَى وَضْعٌ لِأَحَدِ جُزْئَيْهَا أَوْ رَفْعُهُ لِيَلْزَمَ وَضْعُ الْآخَرِ أَوْ رَفْعُهُ وَيَجِبُ إِيجَابُ الشَّرْطِيَّاتِ وَلُزُومِيَّةُ الْمُتَّصِلَةِ وَكُلِّيَّتُهَا أَوْ كُلِّيَّةُ الْوَضْعِ أَوِ الرَّفْعِ

إن لم يكن وقت الاتصال و الانفصال هو بعينه وقت الوضع و الرفع • و الشرطية الموضوعة فيه إن كانت متصلة فاستثناء عين المقدم ينتج عين التالي و استثناء نقيض التالي ينتج نقيض المقدم و إلا لبطل اللزوم دون العكس في شيئ منهما لاحتمال كون التالي أعم من المقدم و إن كانت منفصلة فإن كانت حقيقية فاستثناء عين اي جزء كان ينتج نقيض الآخر لاستحالة الجمع و استثناء نقيض اي جزء كان ينتج عين الآخر لاستحالة الخلو و إن كانت مانعة الجمع ينتج القسم الأول فقط لامتناع الاجتماع دون الخلو و إن كانت مانعة الخلو ينتج القسم الثاني فقط لامتناع الخلو دون الجمع •

الفصل الخامس في لواحق القياس و هي اربعة

٩١ الأول القياس المركب و هو ما يتركب من مقدمات ينتج بعضها نتيجة يلزم منها و من مقدمة اخرى نتيجة اخرى و هلم جرا إلى ان يحصل المطلوب و هو إما موصول النتائج كقولنا كل ج ب و كل ب د فكل ج د ثم كل ج د و كل د ا فكل ج ا ثم كل ج ا و كل ا ه فكل ج ه و إما مفصول النتائج كقولنا كل ج ب و كل ب د و كل د ا و كل ا ه فكل ج ه •

٩٢ الثاني قياس الخلف و هو إثبات المطلوب بإبطال نقيضه كقولنا لو كذب ليس كل ج ب لكان كل ج ب و كل ب ا على انها مقدمة صادقة ينتج لو كذب كل ج ب لكان كل ج ا لكن ليس كل ج ا على انه محال فينتج ليس كل ج ب و هو المطلوب •

٩٣ الثالث الاستقراء و هو الحكم على كلي لوجوده في اكثر جزئياته كقولنا كل حيوان يحرك فكه الأسفل عند المضغ لأن الإنسان و البهائم و السباع كذلك و هو لا يفيد اليقين لاحتمال ان لا يكون الكل بهذه المثابة كالتمساح •

٩٤ الرابع التمثيل و هو إثبات حكم في جزئي لوجوده في جزئي آخر لمعنى مشترك بينهما كقولهم العالم مؤلف فهو حادث كالبيت و اثبتوا علية المعنى المشترك بالدوران و بالتقسيم الغير المردد بين النفي و الإثبات كقولهم علة الحدوث إما التأليف او كذا او كذا و الأخيران باطلان بالتخلف فتعين الأول و هو ضعيف اما الدوران فلأن الجزء الأخير من العلة و سائر الشروط مدار

مَعَ اَنَّها لَيْسَتْ بِعِلَّةٍ وَاَمَّا التَّقْسِيمُ فَالْحَصْرُ مَمْنُوعٌ لِجَوازِ عِلِّيَّةِ غَيْرِ الْمَذْكُورِ وَبِتَقْدِيرِ تَسْلِيمِ عِلِّيَّةِ الْمُشْتَرِكِ فِي الْمَقِيسِ عَلَيْهِ لاَيَلْزَمُ عِلِّيَّةُ فِي الْمَقِيسِ لِجَوازِ اَنْ يَكُونَ خُصُوصِيَّةُ الْمَقِيسِ عَلَيْهِ شَرْطًا لِلْعِلِّيَّةِ اَوْ خُصُوصِيَّةُ الْمَقِيسِ مَانِعَةً عَنْهَا •

وَاَمَّا الْخَاتِمَةُ فَفِيهَا بَحْثَانِ

اَلْاَوَّلُ فِي مَوَادِّ الْاَقْيِسَةِ

٩٥ وَهِيَ يَقِينِيَّاتٌ وَغَيْرُ يَقِينِيَّاتٍ • اَمَّا الْيَقِينِيَّاتُ فَسِتٌّ اَوَّلِيَّاتٌ وَهِيَ قَضَايَا تَصَوُّرُ طَرَفَيْهَا كَافٍ فِي الْجَزْمِ بَيْنَهُمَا كَقَوْلِنَا اَلْكُلُّ اَعْظَمُ مِنَ الْجُزْءِ وَمُشَاهَدَاتٌ وَهِيَ قَضَايَا يُحْكَمُ بِهَا بِقُوًى ظَاهِرَةٍ اَوْ بَاطِنَةٍ كَالْحُكْمِ بِاَنَّ الشَّمْسَ مُضِيئَةٌ وَاَنَّ لَنَا خَوْفًا وَغَضَبًا وَمُجَرَّبَاتٌ وَهِيَ قَضَايَا يُحْكَمُ فِيهَا لِمُشَاهَدَةٍ مُتَكَرِّرَةٍ مُفِيدَةٍ لِلْيَقِينِ كَالْحُكْمِ بِاَنَّ شُرْبَ السَّقَمُونِيَا مُوجِبٌ لِلْاِسْهَالِ وَحَدْسِيَّاتٌ وَهِيَ قَضَايَا يُحْكَمُ فِيهَا لِحَدْسٍ اَقْوَى مِنَ النَّفْسِ مُفِيدٍ لِلْعِلْمِ كَالْحُكْمِ بِاَنَّ نُورَ الْقَمَرِ مُسْتَفَادٌ مِنَ الشَّمْسِ وَالْحَدْسُ هُوَ سُرْعَةُ الْاِنْتِقَالِ مِنَ الْمَبَادِي اِلَى الْمَطَالِبِ وَمُتَوَاتِرَاتٌ وَهِيَ قَضَايَا يُحْكَمُ فِيهَا لِكَثْرَةِ الشَّهَادَاتِ بَعْدَ الْعِلْمِ بِعَدَمِ امْتِنَاعِهَا وَالْاَمْنِ مِنَ التَّوَاطُؤِ عَلَى الْكَذِبِ كَالْحُكْمِ بِوُجُودِ مَكَّةَ وَبَغْدَادَ وَلَايَنْحَصِرُ مَبْلَغُ الشَّهَادَاتِ فِي عَدَدٍ بَلِ الْيَقِينُ هُوَ الْقَاضِي بِكَمَالِ الْعَدَدِ • وَالْعِلْمُ الْحَاصِلُ مِنَ التَّجْرِبَةِ وَالْحَدْسِ وَالتَّوَاتُرِ لَيْسَ بِحُجَّةٍ عَلَى الْغَيْرِ وَقَضَايَا قِيَاسَاتُهَا مَعَهَا وَهِيَ الَّتِي يُحْكَمُ بِهَا بِوَاسِطَةٍ لَاتَغِيبُ عَنِ الذِّهْنِ عِنْدَ تَصَوُّرِ حُدُودِهَا كَالْحُكْمِ بِاَنَّ الْاَرْبَعَةَ زَوْجٌ لِانْقِسَامِهَا بِمُتَسَاوِيَيْنِ • وَالْقِيَاسُ الْمُؤَلَّفُ مِنْ هٰذِهِ السِّتَّةِ يُسَمَّى بُرْهَانًا وَهُوَ اِمَّا لِمِّيٌّ وَهُوَ الَّذِي يَكُونُ الْحَدُّ الْاَوْسَطُ فِيهِ عِلَّةً لِلنِّسْبَةِ فِي الذِّهْنِ وَالْعَيْنِ كَقَوْلِنَا هٰذَا مُتَعَفِّنُ الْاَخْلَاطِ وَكُلُّ مُتَعَفِّنِ الْاَخْلَاطِ مَحْمُومٌ فَهٰذَا مَحْمُومٌ وَاِمَّا اِنِّيٌّ وَهُوَ الَّذِي يَكُونُ الْحَدُّ الْاَوْسَطُ فِيهِ عِلَّةً لِلنِّسْبَةِ فِي الذِّهْنِ فَقَطْ كَقَوْلِنَا هٰذَا مَحْمُومٌ وَكُلُّ مَحْمُومٍ مُتَعَفِّنُ الْاَخْلَاطِ فَهٰذَا مُتَعَفِّنُ الْاَخْلَاطِ •

٩٦ وَاَمَّا غَيْرُ الْيَقِينِيَّاتِ فَسِتٌّ مَشْهُورَاتٌ وَهِيَ قَضَايَا يُحْكَمُ بِهَا لِاعْتِرَافِ جَمِيعِ النَّاسِ بِهَا لِمَصْلَحَةٍ عَامَّةٍ اَوْ رِقَّةٍ اَوْ حَمِيَّةٍ اَوْ اِنْفِعَالَاتٍ عَنْ عَادَاتٍ وَشَرَائِعَ وَآدَابٍ وَالْفَرْقُ بَيْنَهُمَا وَبَيْنَ الْاَوَّلِيَّاتِ اَنَّ الْاِنْسَانَ لَوْ خُلِّيَ وَنَفْسَهُ مَعَ قَطْعِ النَّظَرِ عَمَّا وَرَاءَ عَقْلِهِ لَمْ يَحْكُمْ بِهَا بِخِلَافِ الْاَوَّلِيَّاتِ كَقَوْلِنَا الظُّلْمُ قَبِيحٌ وَالْعَدْلُ حَسَنٌ وَكَشْفُ الْعَوْرَةِ مَذْمُومٌ وَمُرَاعَاةُ الضُّعَفَاءِ مَحْمُودَةٌ وَمِنْ هٰذِهِ مَا يَكُونُ صَادِقًا وَمَا يَكُونُ كَاذِبًا

وَلِكُلِّ قَوْمٍ مَشْهُورَاتٌ وَلِأَهْلِ كُلِّ صِنَاعَةٍ بِحَسَبِهَا وَمُسَلَّمَاتٌ وَهِيَ قَضَايَا تُسَلَّمُ مِنَ الْخَصْمِ فَيُبْنَى عَلَيْهَا الْكَلَامُ لِدَفْعِهِ كَتَسْلِيمِ الْفُقَهَاءِ مَسَائِلَ أُصُولِ الْفِقْهِ وَالْقِيَاسُ الْمُؤَلَّفُ مِنْ هٰذَيْنِ يُسَمَّى جَدَلًا وَالْغَرَضُ مِنْهُ إِقْنَاعُ الْقَاصِرِ عَنْ دَرْكِ الْبُرْهَانِ وَإِلْزَامُ الْخَصْمِ وَمَقْبُولَاتٌ وَهِيَ قَضَايَا تُؤْخَذُ مِمَّنْ يُعْتَقَدُ فِيهِ إِمَّا لِأَمْرٍ سَمَاوِيٍّ أَوْ مَزِيدِ عَقْلٍ وَدِينٍ كَالْمَأْخُوذَاتِ مِنْ أَهْلِ الْعِلْمِ وَالزُّهْدِ وَمَظْنُونَاتٌ وَهِيَ قَضَايَا يُحْكَمُ بِهَا اتِّبَاعًا لِلظَّنِّ كَقَوْلِنَا فُلَانٌ يَطُوفُ بِاللَّيْلِ فَهُوَ سَارِقٌ وَالْقِيَاسُ الْمُؤَلَّفُ مِنْ هٰذَيْنِ يُسَمَّى خِطَابِيَّةً وَالْغَرَضُ مِنْهُ تَرْغِيبُ السَّامِعِ فِيمَا يَنْفَعُهُ مِنْ تَهْذِيبِ الْأَخْلَاقِ وَأَمْرِ الدِّينِ وَمُخَيَّلَاتٌ وَهِيَ قَضَايَا إِذَا أُورِدَتْ عَلَى النَّفْسِ أَثَّرَتْ فِيهَا تَأْثِيرًا عَجِيبًا مِنْ قَبْضٍ أَوْ بَسْطٍ كَقَوْلِهِمُ الْخَمْرُ يَاقُوتِيَّةٌ سَيَّالَةٌ وَالْعَسَلُ مُرَّةٌ مُهَوِّعَةٌ وَالْقِيَاسُ الْمُؤَلَّفُ مِنْهَا يُسَمَّى شِعْرًا وَالْغَرَضُ مِنْهُ انْفِعَالُ النَّفْسِ بِالتَّرْغِيبِ وَالتَّنْفِيرِ وَيُرَوِّجُهُ الْوَزْنُ وَالصَّوْتُ الطَّيِّبُ وَوَهْمِيَّاتٌ وَهِيَ قَضَايَا كَاذِبَةٌ يَحْكُمُ بِهَا الْوَهْمُ فِي أُمُورٍ غَيْرِ مَحْسُوسَةٍ كَقَوْلِنَا كُلُّ مَوْجُودٍ فَهُوَ مُشَارٌ إِلَيْهِ وَوَرَاءَ الْعَالَمِ فَضَاءٌ لَا يَتَنَاهَى وَلَوْلَا دَفْعُ الْعَقْلِ وَالشَّرَائِعِ لَكَانَتْ مِنَ الْأَوَّلِيَّاتِ وَعُرِفَ كَذِبُ الْوَهْمِ لِمُوَافَقَتِهِ الْعَقْلَ فِي مُقَدِّمَاتِ الْقِيَاسِ النَّاتِجِ لِنَقِيضِ حُكْمِهِ وَإِنْكَارِهِ وَنَفْيِهِ عِنْدَ الْوُصُولِ إِلَى النَّتِيجَةِ وَالْقِيَاسُ الْمُؤَلَّفُ مِنْهَا يُسَمَّى سَفْسَطَةً وَالْغَرَضُ مِنْهُ إِفْحَامُ الْخَصْمِ •

٩٧ وَالْمُغَالَطَةُ قِيَاسٌ تَفْسُدُ صُورَتُهُ بِأَنْ لَا يَكُونَ عَلَى هَيْئَةٍ مُنْتِجَةٍ لِاخْتِلَالِ شَرْطٍ مُعْتَبَرٍ بِحَسَبِ الْكَمِّيَّةِ أَوِ الْكَيْفِيَّةِ أَوِ الْجِهَةِ أَوْ مَادَّتُهُ بِأَنْ يَكُونَ بَعْضُ الْمُقَدِّمَةِ وَالْمَطْلُوبِ شَيْئًا وَاحِدًا لِكَوْنِ الْأَلْفَاظِ مُتَرَادِفَةً كَقَوْلِنَا كُلُّ إِنْسَانٍ بَشَرٌ وَكُلُّ بَشَرٍ ضَحَّاكٌ فَكُلُّ إِنْسَانٍ ضَحَّاكٌ أَوْ كَاذِبَةٌ شَبِيهَةٌ بِالصَّادِقَةِ مِنْ جِهَةِ اللَّفْظِ كَقَوْلِنَا لِصُورَةِ الْفَرَسِ الْمَنْقُوشَةِ عَلَى الْحَائِطِ هٰذَا فَرَسٌ وَكُلُّ فَرَسٍ صَهَّالٌ يُنْتِجُ أَنَّ تِلْكَ الصُّورَةَ صَهَّالَةٌ أَوْ مِنْ جِهَةِ الْمَعْنَى كَعَدَمِ مُرَاعَاةِ وُجُودِ الْمَوْضُوعِ فِي الْمُوجَبَةِ كَقَوْلِنَا كُلُّ إِنْسَانٍ وَفَرَسٍ فَهُوَ إِنْسَانٌ وَكُلُّ إِنْسَانٍ وَفَرَسٍ فَهُوَ فَرَسٌ يُنْتِجُ أَنَّ بَعْضَ الْإِنْسَانِ فَرَسٌ وَوَضْعِ الطَّبِيعِيَّةِ مَقَامَ الْكُلِّيَّةِ كَقَوْلِنَا الْإِنْسَانُ حَيَوَانٌ وَالْحَيَوَانُ جِنْسٌ يُنْتِجُ أَنَّ الْإِنْسَانَ جِنْسٌ وَأَخْذِ الْأُمُورِ الذِّهْنِيَّةِ مَكَانَ الْعَيْنِيَّةِ وَبِالْعَكْسِ فَعَلَيْكَ بِمُرَاعَاةِ كُلِّ ذٰلِكَ لِئَلَّا تَقَعَ فِي الْغَلَطِ وَالْمُسْتَعْمِلُ لِلْمُغَالَطَةِ هُوَ سُوفِسْطَائِيٌّ إِنْ قَابَلَ بِهَا الْحَكِيمَ وَمُشَاغِبِيٌّ إِنْ قَابَلَ بِهَا الْجَدَلِيَّ •

اَلْبَحْثُ الثَّانِي فِي أَجْزَاءِ الْعُلُومِ

٩٨ وَهِيَ مَوْضُوعَاتٌ وَقَدْ عَرَفْتَهَا وَمَبَادٍ وَهِيَ حُدُودُ الْمَوْضُوعَاتِ وَأَجْزَائِهَا وَأَعْرَاضِهَا الذَّاتِيَّةِ وَالْمُقَدَّمَاتُ غَيْرُ الْبَيِّنَةِ فِي نَفْسِهَا الْمَأْخُوذَةِ عَلَى سَبِيلِ الْوَضْعِ كَقَوْلِنَا لَنَا أَنْ نَصِلَ بَيْنَ كُلِّ نُقْطَتَيْنِ بِخَطٍّ مُسْتَقِيمٍ وَأَنْ نَعْمَلَ بِأَيِّ بُعْدٍ عَلَى كُلِّ نُقْطَةٍ شِئْنَا دَائِرَةً وَالْمُقَدَّمَاتُ الْبَيِّنَةُ بِنَفْسِهَا كَقَوْلِنَا الْمَقَادِيرُ الْمُسَاوِيَةُ لِمِقْدَارٍ وَاحِدٍ مُتَسَاوِيَةٌ وَمَسَائِلُ وَهِيَ الْقَضَايَا الَّتِي تُطْلَبُ بِهَا نِسْبَةُ مَحْمُولَاتِهَا إِلَى مَوْضُوعَاتِهَا فِي ذَلِكَ الْعِلْمِ وَمَوْضُوعَاتُهَا قَدْ تَكُونُ مَوْضُوعَ الْعِلْمِ كَقَوْلِنَا كُلُّ مِقْدَارٍ مُشَارِكٌ لِلْآخَرِ أَوْ مُبَايِنٌ وَقَدْ تَكُونُ هُوَ مَعَ عَرَضٍ ذَاتِيٍّ كَقَوْلِنَا كُلُّ مِقْدَارٍ وَسَطٍ فِي النِّسْبَةِ فَهُوَ ضِلْعُ مَا يُحِيطُ بِهِ الطَّرَفَانِ وَقَدْ تَكُونُ نَوْعَهُ كَقَوْلِنَا كُلُّ خَطٍّ يُمْكِنُ تَنْصِيفُهُ وَقَدْ تَكُونُ نَوْعَهُ مَعَ عَرَضٍ ذَاتِيٍّ كَقَوْلِنَا كُلُّ خَطٍّ قَامَ عَلَى خَطٍّ فَإِنَّ زَاوِيَتَيْ جَنْبَتَيْهِ إِمَّا قَائِمَتَانِ أَوْ مُتَسَاوِيَتَانِ لَهُمَا وَقَدْ تَكُونُ عَرَضًا ذَاتِيًّا كَقَوْلِنَا كُلُّ مُثَلَّثٍ فَإِنَّ زَوَايَاهُ مِثْلُ قَائِمَتَيْنِ وَأَمَّا مَحْمُولَاتُهَا فَخَارِجَةٌ عَنْ مَوْضُوعَاتِهَا لِامْتِنَاعِ أَنْ يَكُونَ جُزْءُ الشَّيْءِ مَطْلُوبًا ثُبُوتُهُ لَهُ بِالْبُرْهَانِ * وَلْيَكُنْ هَذَا آخِرَ الْكَلَامِ فِي هَذِهِ الرِّسَالَةِ * وَالْحَمْدُ لِوَاهِبِ الْعَقْلِ وَالْهِدَايَةِ * وَالصَّلٰوةُ عَلَى مُحَمَّدٍ وَآلِهِ مُنْجِي الْخَلَائِقِ مِنَ الْغَوَايَةِ * وَأَصْحَابِهِ الَّذِينَ هُمْ أَهْلُ الدِّرَايَةِ * وَالْحَمْدُ لِلَّهِ أَوَّلًا وَآخِرًا *

Second Inquiry.

On the parts of which Sciences consist.

100. They are: [*First*] the subjects (or topics of the science) of which we have spoken above [§ 6]; [*Secondly*] the principles, that is to say, the descriptions (or definitions) of the subjects and their parts and essential accidents and the premisses [of the sciences. These are of two kinds,] either they are not self-evident and taken by the way of appointment [*i. e.* taken as granted; regarding "appointment" see § 8.] *e. g.* connecting any two parts by a straight line; drawing a circle at any distance round any point—or they are self-evident, *e. g.* quantities equal to another quantity are equal among themselves. [*Thirdly*] the theorems; these are propositions by which the relation of the predicates to their subjects in the respective science is investigated. Their subjects are either identical with the subjects of the science, *e. g.* every quantity either has something in common with another quantity or it is heterogeneous. Or they are identical, but contain in addition an essential accident, *e. g.* every mean quantity is a side which is surrounded by the two extremes; or the subject is the species, [and the subject of the science is the genus,] *e. g.* every line can be divided into two halves; or it is the species together with an essential accident, *e. g.* if a line stands upon another, the angles on either side are either two right angles or equal to two right angles; or it is an essential accident, *e. g.* the angles of every triangle are equal to two right angles. The predicates of theorems are external to their subjects, for it is inadmissible that it should be necessary to establish a part of a thing by demonstration. Here ends the Risálah Shamsyyah.

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men. [4] Presumptions, these are propositions founded on belief, *e. g.* a man who sneaks about at night is a thief. A syllogism (argument), composed of these two kinds of propositions is called oratorial. Its object is to exhort the hearer to things useful for him, such as good morals and religiousness. [5] *Imaginativa*, these, are propositions which produce wonderful effects on the mind such as melancholy, joy, &c., *e. g.* wine is fluid ruby, honey is bitter and nauseous. A syllogism composed of such propositions is called poetry and its object is to impress the soul with a desire or dislike, and it is accompanied by metre and a sweet voice. [6] Preconceptions; being judgments of wahm (and not of reason) they are false propositions regarding things, which are not objects of the senses, *e. g.* what we can see is all that exists and beyond the world is infinite space. Preconceptions if they were not refuted by reason or revelation would pass for axioms, but their falsity can be recognized by this that reason assents to them as mere premisses of a syllogism; yet upon finding that they lead to a conclusion contradictory of its judgment, it cannot but deny and reject the result. A syllogism consisting of preconceptions is called sophistry, and its object is to silence the opponent.

46. Wahm means originally a fancy or thought which we cannot get rid of. It is said in the tradition وهم تزويج ميمونة "he could not help thinking of the marriage with Maymúniah." Hence اوهم الصلوة [occupied with other thoughts] he forgot to say the prayers. This form (ايهام) is also used transitively "to cause to forget" "to mislead;" hence yhám means a sentence which has two or more meanings of which the less obvious is intended—a pun, because it is an attempt to mislead the reader. Wahm means also a misconception and answers precisely to the German word Wahn, and it is used in places like this, our fear of a dead body is a wahm. In this sense it is frequently used in Hindústány. Philosophers have invented a separate faculty for illusory impressions, and they call this faculty equally wahm as it will be perceived from the text. The commentator says: "wahm is a corporeal [or physical in opposition to mental] faculty of man, by which he perceives such particular [notions] as cannot be perceived by the senses. This faculty follows the senses." According to Jorjány it means instinct; he says that we perceive by it moral qualities such as bravery, liberality, &c., and that it is the faculty which causes the sheep to love its young one, and to fear the wolf.

99. Fallacy means an error in the form of syllogism, which renders it inconclusive on account a violation of some important condition in reference to quantity or quality or mode, or of an error in the matter. In a fallacy one of the premisses and the question may be identical, the words used being synonymous, *e. g.* every man is a person, and every person is risible, therefore every man is risible. Or one of the premisses may be false but resembling truth, owing to the improper use of a word *e. g.* if we were to say of a painted horse; every horse neighs, this is a horse; therefore it neighs. Or the falsity of the premisses may be owing to a mistake in the meaning, *e. g.* all what is man and horse is man and all what is horse and man is horse; therefore same men are horse. Or a physical [universal] may be used instead of a [logical] universal, *e. g.* man is an animal, animal is a genus; therefore man is a genus. Or a conception of the intellect may be taken for a real thing and *vice versâ.* You must observe all these things that you may not fall into error. He who makes use of fallacies is called sophist, if he meets a philosopher with them; but if he meets a disputant with them, he is called eristicos.

that the sun is giving light, or that we feel fear and anger, [the former propositions of this class are called حسيات *sensualia*, and the latter وجدانيات *sensa*.] [3] *Experta*, these are propositions which are the result of repeated observation enabling us to arrive to certainty, *e. g.* scamony is a purgative. [4] *Acumenalia* (guesses); these are propositions which are arrived at by superior acuteness which leads to knowledge, *e. g.* the light of the moon is reflected from the sun. Acuteness means quickness in passing from [general] principles to results. [5] *Testata*; these are propositions which rest on abundant testimony regarding a subject of which we know that it is not impossible. Such testimony must be free from suspicion of a conspiracy of the witnesses, *e. g.* the existence of Makkah and Baghdád. The number of witnesses required to make a fact certain cannot be laid down; but we ought to have a number sufficient to destroy all doubt. Knowledge acquired by experience, acuteness and testimony cannot be an argument against other knowledge. [6]. Propositions accompanied by their demonstrations; in these propositions we come to a judgment by a medium which is not concealed from our intellect at the time we apprehend the terms of the proposition, *e. g.* four is an even number because it is divisible into two equal parts.

The syllogism which is composed of these six kinds of propositions is called demonstration. It is of two kinds: it is called propteric (from *propter quid*, διοτι,) if the middle term is the cause of the relation [of the two terms] both in the intellect and in reality, (*i. e.* subjectively and objectively,) *e. g.* the humors of this person are putrid, every person whose humors are putrid suffers from fever, therefore this person suffers from fever. It is called quiatic (from *quia*,) if the middle term is the cause of the relation in the intellect only, (*i. e.* merely subjectively,) *e. g.* this man has fever, every person who suffers from fever has putrid humors, therefore this person has putrid humors, [the presence of fever is the cause of our conviction that the humors are putrid; but in reality it is the effect of the putridity of the humors.]

98. There are six non-certainties. [1] *Nota*; these are propositions which are acknowledged by all men, on the ground of general expediency, [*e. g.* justice is good, oppression is bad,] or on the ground of sympathy, [*e. g.* to protect the weak is praise-worthy], or on account of propriety, [*e. g.* exposing the *pudenda* is wrong,] or on the ground of popular habits, [*e. g.* the killing of animals is not right with the Hindús,] or on the ground of divine law and humanity. We can distinguish conventional principles from axioms by divesting ourselves of every thing which is not in the mind itself; by doing so we arrive to axioms but not to conventional principles. Some of these principles are true and others are false. Every nation and every profession has its own conventional principles. [2] *Admissa*; these are propositions which have been admitted by the opponent and upon which the disputation is founded with a view of refuting him, [they may be generally admitted or merely by the disputant,] *e. g.* the questions regarding the sources of the law with divines. A syllogism (argument) composed of these two classes is called disputation. Its object is to satisfy an opponent who fails to see the force of an exact demonstration. [3] *Accepta*, these are propositions which are taken on the authority of a person on faith, on account of his being [supposed to be] endowed with supernatural powers or superior knowledge or religiousness, *e. g.* maxims which we take from learned or holy

95. *Third.*—Induction is a judgment that, what is found in most of the parts (dividing members) is universal, *e. g.* all animals move the lower jaw in eating because oxen, tiger, &c. move it. This does not enable us to arrive at certainty on account of the presumption, that not all are like those, as is the case (in regard to the above example) with the crocodile. [If a thing is found in *all* the dividing members, it is called القياس المقسم *enumeratio partium.*]

96. *Fourth.*—Example. A judgment is affirmed of a particular (singular) which is applicable to another particular, because they have a meaning [see note 11] in common, *e. g.* the world is composed of parts and therefore, as in the case of a house, it does not exist from eternity. That the meaning which the two particulars have in common has the nature of a cause is demonstrated by the argument of "concomitancy" and of "division." This last however does not amount to a dilemmatic judgment, such that if one part is false the other must be true, *e. g.* the cause of destructibility is either composition or such a thing or such a thing; the futility of the two latter assumptions is shown by *reductio ad absurdum*, and thereby the first is established. Both these arguments are weak. The former because the last [of the four] parts of a complete cause together with all the conditions is called the madár of an effect, but it cannot be called its cause. Division forms a weak argument, because it is impossible to say that nothing else [than the parts enumerated] is the cause, and supposing it be admitted that, what the two things which are analogous, have in common, is the cause in the case cited, it does not follow that it is also the cause of the thing to be proved, for it may happen that a peculiarity of the case cited is the condition for the operations of the cause or that a peculiarity of the thing to be proved renders it impossible that the same cause should be in operation.

44. A complete cause consists of four parts or causes 1. العلة الفاعلية *causa operativa*, 2. العلة المادية *causa materialis*, 3. العلة الصورية *causa formalis*, 4. العلة الغائية *causa intentionalis*. The smith is the first of this four causes in producing a knife, iron is the second, the shape is the third, and the object (cutting,) is the fourth, or, as it is called in the text, the last; (see Maybodzy, Calcutta edition, p. 206.)

45. In law the example is called syllogism, and the first particular (singular) is called branch فرع the second particular is called root اصل and what they have in common is called cause العلة or the connecting link الجامع The reader will observe in studying the original text of this paragraph that the root is called مقيس عليه in Logic and the branch مقيس. In Logic the *concomitans* is called دائر and that of which it is the *concomitans* is called madár مدار

CONCLUSION.

First Inquiry.

On the matter of Syllogisms.

97. The matter of a syllogism is either a certainty or a non-certainty. There are six certainties. [1] *Axioms* (or first principles). These are propositions the apprehension of whose two terms is by itself sufficient to convey conviction, *e. g.* the total is greater than the part. [2] *Observata;* these are propositions in which we pronounce on the strength of the perception of our external or internal faculties, *e. g.*

sive] it is necessary: [*First*] that the hypotheticals be affirmative; [*Secondly*] that if the hypothetical is conjunctive, it be cogent (literally adhesive,) [and that, if it is disjunctive,] it be antagonistic; [*Thirdly*] that either the hypotheticals be universal or that the assertion that one of the parts is or is not be universal (*i. e.* that it be asserted it is or is not at all times and under all circumstances); unless the time of conjunction or disjunction is also the time regarding which it is asserted that the part is or is not, [*e. g.* whenever Zayd comes with Bakr in the afternoon, I receive him with honor, he did come with Bakr in the afternoon and therefore he was received by me with honor.]

If the hypothetical which forms part of the interpellative syllogism is conjunctive, from the interpellation of the antecedent follows the consequent as conclusion, and from the interpellation of the contradictory of the consequent follows the contradictory of the antecedent as conclusion. If this is not the case the adhesion is not established. The reverse is not admissible in either of the above two cases, for the consequent may be more general than the antecedent.

If the hypothetical is a veritable disjunctive proposition, [see § 53] and if, in the interpellation any part, whichsoever, is asserted, there follows from it the contradictory of the other part on account of their incompatibility, but if the interpellation consists of the contradictory of any part, whichsoever, there follows from it the other part on account of their exclusiveness.

If the disjunctive hypothetical is incompatible, the conclusion is as in the first case only, (*i. e.* there follows from it the contradictory of one part, if the other is asserted with interpellation;) because the two parts are incompatible but not exclusive; and if the disjunctive is exclusive, the conclusion is as in the second case only, because the two parts are exclusive but not incompatible, (*e. g.* either Zayd is on the sea or he is not drowned; but he is not at sea therefore he is not drowned).

Fifth Section.

Pendents of the Syllogism.

93. These are four. *First.*—The compound syllogism (the Sorites). It is composed of several premisses, some (two) of which lead to a conclusion, which (conclusion) with another premiss leads to another conclusion, and so on until we arrive at the question. The conclusions are either connected, as every C is B, and every B is D, therefore every C is D; again every C is D and every D is A, and therefore every C is A; again every C is A and every A is E, therefore every C is E; or the conclusions are disconnected, as, every C is B and every B is D and every D is A and every A is E; therefore every C is E.

94. *Second.*—*Reductio ad absurdum.* The question is proved by disproving the contradictory thereof; *e. g.* If you deny that some C is not B, let every C be B and let every B be A. Now if this proposition (every B is A) is true, we say if you deny that some C is not B, you must allow that every C is A; but not every C is A, and therefore your assertion is absurd, and there follows not every C is B. This was to be demonstrated.

90. *Fourth kind.* It is composed of a categorical and a disjunctive premiss and it is of two descriptions. *First.*—The number of categorical propositions is the same as the number of disjunctions, and each categorical proposition has one term with the parts of the disjunction in common, and the composition is either identical or there is a difference of composition in the conclusion. Example of a case in which the composition is identical: Every C is either B or D or E, and every B is T and every D is T and every E is T; hence it follows that every C is T, because the parts of the disjunction [B, D, E] are true of that term of the categoric premiss which it has in common with the disjunctive premiss. Example in which there is a difference of composition in the conclusion, every C is either B or D or E; but every B is C and every D is T and every E is Z, hence it follows that every C is either C or T or Z, for the reasons just mentioned.

Secondly.—If there are fewer categoric propositions than there are parts of the disjunction, let us suppose there be a categorical proposition of one part and a dis. junctive one of two parts, and the categoric proposition have a term in common with the latter, *e. g.* either, every A is T, or every C is B, but every B is D, hence it follows that either every A is T, or every C is D, on account of the exclusiveness which there is between the premisses of the composition and the term which they have not in common. [If there is no such exclusiveness, the conclusion is not of necessity correct.]

91. *Fifth kind.* It is composed of a conjunctive and of a disjunctive proposition, and the two premisses have either a complete part in common or an incomplete part. In either case only a syllogism in which the conjunctive proposition forms the minor and the disjunctive, the major, is conclusive. Example of the first case: Whenever A is B, C is D, but invariably either every C is D, or E is Z, hence it follows that invariably either, every A is B or E is Z. If the disjunctive proposition, [either C is D or E is Z] is incompatible, the conclusion is equally incompatible, because if a thing is incompatible with the adherent, either perpetually, or only now and then, it follows of necessity that it be also incompatible with the substrate either perpetually or now and then, (*i. e.* under certain circumstances;) and if the disjunctive is exclusive, the conclusion is "it happens sometimes;" for if A is not B, then E is Z, for the contradictory of the middle term [C is D] requires the two terms [of the conclusion to be "E is Z" and "the contradictory of A is B."] The question is demonstrated by the third figure.

Secondly.—[If the two premisses have an incomplete part in common, we say] whenever A is B, every C is D, and perpetually either, every D is E, or D is Z ; if the disjunctive proposition is exclusive, the conclusion is, whenever A is B, either every C or E, or D is Z.

Fourth Section.

On the Interpellative Syllogism.

92. _ It is composed of two antecedents; one of the two is hypothetical and the other is an assertion that one of its two parts is or is not, and from this assertion follows that the other part is or is not. [In order that such a syllogism be conclu-

reductio ad impossibile, that is to say, the contradictory of the conclusion is added to one of the two premisses in order that a conclusion may be come to, which is the converse of the contradictory of the other premiss [*e. g.*, supposing it be not true that some C is A, then it must be true that no C is A; then let us take this as the major premiss and add, every B is C, as the minor; and it follows, no B is A, and by conversion no A is B]. The second and fifth mood can be demonstrated by supposition. We employ supposition for demonstrating the second mood, and the fifth can then be treated in the same manner. Let some individua of A be D, then it follows that every D is A and every D is B, therefore we say, every B is C, and every D is B, and some C is D, and every D is A, and some C is A; this was to be demonstrated.

83 The ancients considered only the first five moods of this figure as conclusive and they held that owing to non-identity in the conclusion the remaining three were not conclusive, this is the case if both premisses are simple, we therefore make it a condition that the negative premiss be of one of the two kinds of peculiar propositions [*i. e.* the conditioned or the conventional]. This obviates non-identity.

Third Section.

Conjugate Syllogism containing hypothetical premisses.

87. These are of five kinds.—The *first* is composed of conjunctive premisses. The norm of this class is a syllogism in which the two premisses have a complete part (term) in common and in reference to this term syllogisms of this kind are classed under the four figures. If the common term is the consequent in the minor premiss and the antecedent in the major, we have the first figure. If it is the consequent in both we have the second. If it is the antecedent in both we have the third figure. If it is the antecedent in the minor premiss and the consequent in the major we have the fourth figure. The conditions of arriving at conclusions, the number of moods and the quantity and quality of the conclusion of every figure are exactly the same as in the categorical. Example of the first mood: whenever A is B, C is D, and whenever C is D, E is Z, consequently whenever A is B, E is Z.

88. *Second kind.* It is composed of two disjunctive premisses; the norm of this class is a syllogism in which the two premisses have not a complete part in common, as: invariably either every A is B or every C is D; again, either every D is E, or every D is Z, consequently, either every A is B or every C is E or every D is Z. [This conclusion is correct,] on account of the exclusiveness which there exists between the two premisses of the composition [*i. e.*, every C is D and every D is E] and one of the other two premisses [*i. e.* every A is B and every E is Z].

89. *Third kind.* It is composed of a categoric and conjunctive premiss. The norm of this class is a syllogism in which the categorical proposition is the major and has a term in common with the consequent of the conjunctive [minor]. The conclusion of the syllogism is a conjunctive proposition, the antecedent of which is the antecedent of the conjunctive premiss, and the consequent is the conclusion of the composition between the consequent [in the minor] and the categorical [premiss], *e. g.*, whenever A is B; C is D; farther D is E ; therefore, whenever A is B, every C is E.

Fourthly.—From an affirmative particular minor premiss and a negative universal major a particular negative conclusion is deduced, as some B is C, and no B is A; therefore some C is not A. This can be demonstrated by *reductio ad impossibile* and by conversion of the minor and by supposition.

Fifthly.—From two affirmative premisses the minor being universal an affirmative particular is derived, as, every B is C, and some B is A; therefore some C is A. This can be shown by *reductio ad impossibile* and by using the converted major as minor and then converting the conclusion. It can also be shown by supposition.

Sixthly.—From an affirmative universal minor premiss and a negative particular major a negative particular conclusion is derived, as, every B is C, and some B is not A, therefore some C is not A. This can be shown by *reductio ad impossibile* and by supposition if the negative be compound [see § 46].

82. Fourth figure. In regard to the quality, and quantity, it is necessary that the two premisses be affirmative and the minor premiss a universal; or the two premisses must differ from each other in quality and one of them must be a universal. If this be not the case there will be non-identity which renders it impossible to come to a conclusion. This figure has eight conclusive moods:—

First.—From two affirmative universal premisses an affirmative particular conclusion is deduced, as, every B is C, and every A is B; therefore some C is A. It is demonstrated by conversion of the arrangement which gives a converted conclusion, [*i. e.* every A is B, and every B is C; therefore every A is C.]

Secondly.—From two affirmative premisses, the major being a particular, follows an affirmative particular conclusion, as, every B is C, and some A is B; therefore some C is A; the demonstration is the same as in the preceding mood.

Thirdly.—From two universal premisses, the minor being negative, follows a negative universal conclusion, as, no B is C, and every A is B; and therefore no C is A. The demonstration is the same as above.

Fourthly.—From two universal premisses, the minor being affirmative, follows a negative particular conclusion, as, every B is C, and no A is B; therefore some C is not A. It is demonstrated by the conversion of the two premisses; [*viz.* some C is B, and no B is A; therefore some C is not A.].

Fifthly.—From an affirmative particular minor and a negative universal major follows a negative particular conclusion, as, some B is C, and no A is B; therefore some C is not A. It is demonstrated like the preceding.

Sixthly.—From a negative particular minor and an affirmative universal major follows a negative particular conclusion, as, some B is not C, and every A is B; therefore some C is not A. By conversion of the minor it is reduced to the second [figure].

Seventhly.—From an affirmative universal minor and a negative particular major follows a negative particular conclusion, as, every B is C, and some A is not B; therefore some C is not A. By conversion of the major it is reduced to the third figure.

Eighthly.—From a negative universal minor and an affirmative particular major follows a negative particular conclusion, as, no B is C, and some A is B; therefore some C is not A. It is demonstrated by conversion of the arrangement whereby a converted conclusion is arrived to; the first five moods can also be demonstrated by

the conclusion is attached to the major premiss, producing the contradictory of the minor premiss as conclusion, [*e. g.*, if you deny that no man is a stone, let us suppose, some men are stones ; under this supposition we have: some men are stones; no stone is an animal; therefore some men are not animals—this is contrary to the admission, that every man is an animal.] [It can also be demonstrated] by conversion of the major premiss, [*e. g.*, every animal is a not-stone,] whereby it is reduced to the first figure.

Secondly.—From two universals, the major premiss being affirmative a negative universal conclusion is obtained, *e. g.*, no C is B; and every A is B ; therefore no C is A. This can be demonstrated by *reductio ad impossibile ;* and also by converting the minor premiss, putting it into the place of the major [taking the major as the minor and converting of the conclusion].

Thirdly.—From an affirmative particular minor premiss and negative universal major a negative particular conclusion is deduced, as: some C [men] are B [fair]; no A [negro] is B; therefore some C are not A. This can be demonstrated by *reductio ad impossibile* and conversion of the major whereby it is reduced to the first figure. [It can also be demonstrated by supposition:] let us suppose for this purpose that the exact subject of the particular proposition be D [Caucasians], then every D is B, no A is B; therefore no D is A. Hence we say, some C is D; and no D is A; therefore some C is not A.

Fourthly.—From a negative particular minor and an affirmative universal major a negative particular conclusion is deduced, as : some C is not B; and every A is B; therefore some C is not A. It can be demonstrated by *reductio ad impossibile ;* and by supposition, if the negative be compound, (*i. e.* not indivisible, otherwise the subject might have no assignable significates ; see § 46.)

81. In the third figure the minor must be affirmative, else there will be non-identity, and one of the two premisses must be universal, else some of the things of which the minor term is predicated may be different from some of the things of which the major is predicated, and consequently it leads to no result.

The conclusive moods of this figure are six: *First.*—From two universal affirmative premisses an affirmative particular conclusion is derived, as, every B is C; and every B is A; therefore some C is A. It can be demonstrated by *reductio ad impossibile*, *i. e.* the contradictory of the conclusion is [taken as major premiss and] added to the minor premiss to deduce the contradictory of the major; and [it can also be demonstrated by reduction to the first figure,] which is effected by the conversion of the minor.

Secondly.—From two universals the minor premiss being negative, a negative particular conclusion is deduced, as: every C is B, and no B is A; therefore some C is not A. [It can be demonstrated by reductio ad impossibile and] by conversion of the minor premiss.

Thirdly.—From two affirmative premisses, the major being a universal, an affirmative particular conclusion is deduced, as, some B is C, and every B is A; therefore some C is A. [This can be demonstrated] by *reductio ad impossibile* and by conversion of the minor, and by supposing the [exact] subject of the particular premiss to be D. Then: every D is B, and every B is A; therefore every D is A, then we say: D is C and every D is A; therefore some C is A; and this was to be demonstrated.

42. The hypothetical syllogism is called interpellative, because the conjunction لكن "but" is used in it, which is called the "exceptive conjunction" in Logic, but in grammar it is called "reparative or interpellative conjunction" حرف الاستدراك. The latter term appears to me best to express the idea. The sentence following "but" is called استثنا which literally means exception but which I translate by interpellation.

78. The subject of the question is called minor [term,] and its predicate is called major, and a proposition which forms part of a Syllogism is called premiss, and the premiss which contains the minor [term] is called minor [premiss], and that which contains the major [term] major [premiss], and the repeated intermediate term is called the middle term, the conjugation (connexion) between the minor and major premisses is called the mood, and the shape resulting from the manner in which the middle term is placed in regard the other two terms is called figure. There are four figures: in the first figure the middle term is the predicate in the minor premiss and the subject in the major premiss; in the second figure it is the predicate in both; in the third figure it is the subject in both; and in the fourth figure it is the subject in the minor premiss and the predicate in the major premiss.

43. If the premisses of a syllogism, says Qotby, are categoric propositions, it is called categoric syllogism القياس الحملي. If the "*adhærens*" is considered as the result of the syllogism, it is called conclusion النتيجة and if it is yet to be demonstrated by a syllogism, question المطلوب. The minor term is generally less extensive than the major, hence their names.

79. In the first figure the minor premiss must be affirmative, for else the minor term is not contained in the middle term. The major premiss must be a universal (proposition), else it may be that some [things] predicated by the major term are not the same which are predicated of the minor term. It [this figure] admits of four conclusive moods. First, from two affirmative universals an affirmative universal conclusion is derived, as "every C is B; and every B is A; therefore every C is A."

Secondly.—From two universals, the minor premiss being affirmative and the major negative, a universal negative conclusion results as every C is B, no B is A, therefore no C is A.

Thirdly.—From two affirmatives, the minor premiss being a particular, results a particular affirmative conclusion, as some C is B, every B is A; therefore some C is A.

Fourthly.—From an affirmative particular minor premiss and a negative universal major premiss results a negative particular conclusion, as some C is B, no B is A; therefore some C is not A.

The conclusions of this figure are self-evident.

80. In the second figure the two premisses must be different in *quale* (one must be affirmative and the other negative;) and the major premiss must be a universal: else (if either of these two conditions is not fulfilled) we get a non-identity which warrants no inference, *i. e.* from correct premisses, sometimes, you obtain a conclusion which you are able to affirm, and, at another, one which you are obliged to deny.

The conclusive moods are again four. *Firstly,*—From two universals, the minor premiss being affirmative, a negative universal conclusion is obtained, *e. g.*, every C [man] is B [animal ;] no A [stone] is B [animal ;] therefore no C [man] is A [a stone.] This can be shown by *reductio ad impossibile, i. e.*, the contradictory of

40. Ancient Logicians made the process consist in simply prefixing the negative particle to each term and transposing them, *e. g.* every man is an animal; all that is not-animal is not-man. Their view has been rejected, because, as it has been stated above, the negative privative proposition is more general than the affirmative attributive.

FOURTH INQUIRY.

On the Cohesion of Hypotheticals.

75. The affirmative universal conjunctive must be convertible into an incompatible proposition, consisting of the antecedent unaltered and of the contradictory of the consequent, and into an exclusive proposition consisting of the contradictory of the antecedent and of the unaltered consequent, and should it not be thus convertible the adhesion and conjunction are unsound.

The veritable disjunctive proposition must be convertible into four conjunctive propositions. The antecedent of two of them is one of the parts [of the original proposition] unaltered and the consequent is the contradictory of the other part. The antecedent of the other two is the contradictory of one of the two parts and the consequent is the other part unaltered. Every other hypothetical proposition than the veritable must be convertible into another, composed of the contradictories of the two parts.

THIRD BOOK.

ON SYLLOGISM.

FIRST CHAPTER.

Definition and division of Syllogism.

76. Syllogism is a speech composed of propositions, [of such a nature, that] if they are admitted, there follows, from them, taken in themselves, another speech.

41. The reader will observe that the term syllogism comprises in Arabic only the two premisses and not the conclusion.

The words "taken in themselves" are used in the definition in order to exclude arguments in which a strange premiss is employed as a medium to arrive at a conclusion, as A=B, and B=C; therefore A=C. Instead of equal you may read "substrate" in the above example, *e. g.*, Mekkah is in Arabia, Arabia is in Asia; therefore Mekkah is in Asia. The following example will show that this is not a syllogism: A is different from B, B is different from C—from which nothing can be inferred.

77. A Syllogism is [called] interpellative (hypothetical), if the conclusion itself or its contrary is actually mentioned in it, as "if this be a body, it is spacial." Here the very conclusion is mentioned in it. And if we say "but it is not spacial" it follows that it is not a body. In this instance the contradictory is mentioned in it. A Syllogism is called conjugate if it is not like the preceding, *e. g.* "every body is composed of parts, every thing composed of parts is temporal," it follows "every body is temporal." Neither the conclusion nor its opposite are actually mentioned in it.

65. There are seven [modal] forms of negative universal propositions, which cannot be converted, *viz.*, the two temporals, the two existentials, the two possibles and the general absolute ; because the most peculiar among them, the temporal, does not admit of conversion, and if the most peculiar cannot be converted the more general ones cannot be converted, for if the more general can be converted, surely the more peculiar can also be converted ; for an *adhærens* of the more general thing, of necessity, also adheres to the more peculiar. We are correct in saying, the moon can by no means be eclipsed, when she, the sun, and earth form a right angle, but not always ; and we are wrong in saying, by general possibility some lunar eclipses may happen to [another celestial body and] not to the moon. In this example we have chosen the most general mode ; for every lunar eclipse operates of necessity on the moon.

66. The [negative] absolute necessary and absolute perpetual, become by conversion [negative] universal perpetual, for if it is of necessity, or always true, that no C is B, it is always true that no B is C, else some B would, by general absoluteness, be C, and this, together with the original proposition, would prove that some B is necessarily not B—in necessary propositions, and that some B is always not B—in perpetual propositions. This is absurd.

67. The general conditioned and the general conventional become by conversion universal general conventional, for if it is of necessity or perpetually true that no C is B, as long as C exists; no B can ever be C, as long as B exists, else let us suppose that some B is C, whilst it is B, and it follows, if this is taken in connexion with the original proposition, that some B is not B whilst it is B. This is absurd.

The peculiar conditioned and the peculiar conventional are converted into the peculiar non-perpetual conventional. The reason of this process in reference to the general conventional is, that it is an adherent of both kinds of general propositions, (*i. e.* the general conventional and the general conditioned.) The reason why the converted proposition is peculiar non-perpetual, is, because it is not true that some B is absolutely and generally C, because it is true that no B is always C, and therefore it is converted into "no C is always B," but the original proposition was that every C is B. We have therefore proved our thesis by *reductio ad absurdum.*

39. Paragraphs 68, 69 and 70, and again 72, 73 and 74, and again 84, 85 and 86, are omitted in the translation, because they contain details on modals which are of no interest. The last named four paragraphs are also omitted in most Arabic text books on Logic, and not studied in Mohammedan Schools.

Third Inquiry.

On Conversion by Contradiction.

71. This expression means to place the contradictory of the second part of a proposition first, and the first part unaltered second. The *quale* of the new proposition will be the opposite of the original proposition, but it will be equally true, [*e. g.* every man is an animal, and no not-animal is a man.]

(more extensive) than the predicate. In the "all" it is requisite that there be a difference in the mode; for two possible (contingent) propositions are true and two necessary propositions false in matter of possibility (contingency).

60. The contradictory of the absolute necessary proposition is the general possible, for if the necessity is of necessity negatived, the two propositions will surely be contradictory. The contradictory of the absolute perpetual proposition is the general absolute; because the contradiction of the negative "at no time" is the affirmation "at some times," and *vice versâ*. The contradictory of the general conditioned is the possible temporal, that is to say, the proposition which pronounces that necessity in reference to the attribute [see § 50] is not applicable to the converse, *e. g.* every body affected with pleurisy will cough at times on account of his illness. The contradictory of the general conventional is the absolute temporal, *i. e.* the proposition which pronounces that the predicate is affirmed or denied of the subject at some times when the subject is under certain circumstances. The preceding examples illustrate this case.

61. The contradictory of a compound proposition is the contradiction of its two parts. This will be evident to you after you have comprehended the verities of compound propositions and the contradictories of simple propositions, for after you have ascertained that the non-perpetual existential proposition is composed of two general absolute propositions, one of which is affirmative and the other negative, and that the contradictory of the absolute is the perpetual, you will understand, that its opposite is the opposite perpetual or the agreeing perpetual.

62. If [the compound proposition] is particular, what we have mentioned will not be sufficient to contradict it, for it would be false, were we to say "some bodies are animals but not always." And it would be equally wrong, were we to employ the contradictory of either of the two parts [*e. g.* no body is ever an animal]. The correct way of forming the contradictory is to place the contradictories of the two parts universally into a dilemmatic sentence, that is to say, every one must be the contradictory of one of the two parts, *e. g.* every single *individuum* of the genus 'body' is ever either an animal or not an animal.

63. The contradictory of the universal hypothetical is the particular which agrees with it in genus and species, but which is opposed to it in "*quale*" (quality) and "*quantum*" (quantity,) and *vice versâ.*

Second Inquiry.

On even Conversion (Conversio Simplex).

64. Even conversion is an expression which means that the first part of a proposition be put second and the second part first, and that the truth and *quale* remain unaltered, (*i. e.* that the converted proposition remain true, if the original proposition is true, and that it remain affirmative, if the original one is affirmative, and negative if (negative,) (*e. g.* every man is an animal—some animals are men; or no man is a stone, no stone is a man.)

the sun rises it is day. 5. (The reverse of the preceding,) as it happens that whenever the sun rises it is day, the being day proves sun-rise. 6. (Consisting of a categorical and a disjunctive proposition,) if this is a number, it will always be either even or odd. 7. (The reverse,) whenever this is either even or odd it is a number. 8. (Consisting of a conjunctive and a disjunctive proposition,) if, always, whenever the sun rises, it is day, it will always be, that either the sun is rising or it is not day. 9. (The reverse,) if it always happens that either the sun is rising or it is not day, whenever the sun rises it is day.

Third Section.

RULES CONCERNING PROPOSITIONS.

First Inquiry.

On Contradiction.

58. Contradiction is defined as a difference between two propositions in affirming and denying of such a description, that it follows from the difference itself [without medium,] that the one be true and the other false, [*e. g.* Zayd is a man, Zayd is not a man. But, Zayd is a man, Zayd is irrational, are not included in this definition, because they are contradictory by a medium.]

38. The term used by the Arabs for proposition means decision ; and the word which is translated here by contradictory means "*rescindens.*" The commentator says, that which annuls a thing is called its rescindent. In § 27 this term has precisely the same meaning as "contradictory" but this is not always the case. The commentator says the contradictory of the proposition, every man is necessarily an animal, is—it is not the case. The same holds good in all other propositions. In many cases however the contradictory of a proposition has a definite attributive sense, but this is not always the case. It may however happen that the contradictory has a co-extensive *adhærens* which has an intelligible attributive meaning, and if this is the case the term contradictory is applied to it (the *adhærens*). The contradictories of propositions become thereby new propositions with a definite meaning. "Contradictory" then is used in this chapter either for the contradictory itself or for an *adhærens,* which is co-extensive with the contradictory itself.

59. The contradiction of two peculiar (singular) propositions is not ascertained (established), unless the subject and predicate are identical, [example of the contrary: Zayd stands, Amr does not stand.] The identity of the former (subject) comprizes the unity of the condition, [example of the contrary: a body is visible, if it be white, a body is not visible, if it be black;] and the unity of "part" and "all" (quantity of the proposition,) [example of the contrary: Africans are black, that is to say some of them; the Africans are not black, that is to say not all of them.] The identity of the predicate comprizes unity of time and place, [example of the contrary: Zayd sleeps at night or in bed, Zayd wakes at day time or in the bázár,] unity of relation, [example of the contrary: Zayd is father, *i. e.* of 'Amr; Zayd is not father, *i. e.* of Bakr,] unity of possibility and reality, [example of the contrary: wine inebriates in a basin, *i. e.* it may inebriate; wine does not inebriate in a basin, it does not do so actually.]

If the two propositions be fenced, it is requisite, in addition to the above, that there be a difference in quantity, for two particulars are true, [*e. g.* some animals are men, some animals are not men,] and two universals are false [*e. g.* every animal is a man, no animal is a man,] in every matter in which the subject is more general

The affirmative conjunctive is false (nugatory) of two false parts (propositions) and of a false antecedent and true consequent and *vice versâ*, and if it be cogent also of two true [propositions], but if it is coincidental, it is impossible that it be false of two true [propositions].

The veritable affirmative disjunctive proposition is true of one true and one false [proposition], *e. g.* this number is either even or odd; and it is false (nugatory) of two true and of two false [propositions, *e. g.* four is either even or divisible by two; three is either pair or divisible by two]. The incompatible is true (holds) of two false [propositions, *e. g.* Zayd may be a tree or a stone]; and of a true one and a false one, [*e. g.* Zayd may be a stone or a man]; and it is false (nugatory) of two true ones [*e. g.* Zayd may be a man or rational]. The exclusive is true of two true [propositions] and of a true one and a false one and it is false (nugatory) of two false ones. The negative is true of what the affirmative is false and it is false of what the affirmative is true.

56. The universality of a hypothetical proposition consists in this, that (or a hypothetical proposition is called universal if) the consequent be adherent or antagonistic to the antecedent [at all times] and under all circumstances under which the antecedent *can* be, that is to say, such circumstances under which the antecedent may be placed by reason of its connexion with things which are compatible with it. The hypothetical proposition is particular if this is the case under some of those circumstances, and it is peculiarized if it is the case under a definite circumstance. The walls (terms indicative) of the affirmative universal are "whenever," "whatever," "when," [*e. g.* whenever the sun rises it is day], and of the disjunctive "always" [or "at any time," *e. g.* at any time either the sun is up or it is not day]. The wall of the negative universal is in both cases, (*i. e.* in the conjunctive and disjunctive) "certainly not" [*e. g.* when the sun is up it is certainly not night]. The wall of the affirmative particular is in both cases "it will then be," [*e. g.* it will then be day when the sun rises] and of the negative particular in both cases "it will then not be." An affirmative universal can be rendered negative by the introduction of the negative particle into the wall. The walls of the ambiguous conjunctive are simply "if" "when" and of the ambiguous disjunctive "either—or."

57. The hypothetical [proposition] may be composed [1] of two categorical propositions or [2] of two conjunctive ones or [3] of two disjunctive ones or [4] of a categorical and of a conjunctive one or [5] of a categorical and disjunctive one or [6] of a conjunctive and a disjunctive one. Each of the last three kinds if it be conjunctive is sub-divided into two sorts on account of the natural distinction between their antecedent and consequent. But the disjunctives are not thus subdivided because their antecedent is distinguished from the consequent by appointment only. There are therefore nine divisions (or kinds) of conjunctive hypotheticals and six of disjunctive hypotheticals. You will be able to form examples yourself.

37. Examples of the nine conjunctives. 1. Whenever this is a man it is an animal. 2. Whenever it happens that a thing is a man it is an animal, and whenever a thing is not an animal it is not a man. 3. Always whenever it is met with this number will be even or odd, and always it will be either divisible into equal parts or not divisible. 4. (Consisting of a categorical and of a conjunctive proposition,) if sunrise is the cause of day, whenever

It (the hypothetical proposition) is either conjunctive or disjunctive. [See § 39.]
The conjunctive (conditional) is either cogent (literally adhesive) [or contingent.] In the cogent the consequent is true under the supposition that the antecedent be true on account of the connexion between them, which is the cause thereof, as for instance, if the two propositions be connected by causation [*e. g.* if the sun rises day approaches, if day approaches the sun rises; if day approaches the world becomes illuminated—the cause of both phenomena being the rising of the sun;] or correlation [*e. g.* if Zayd is the father of Bakr, Bakr is his son]. In the contingent [the consequent is true if the antecedent is true] by merely accidental agreement of the two parts (or of the two propositions of which the hypothetical consists) in being true, *e. g.* if man is endowed with reason, the donkey is endowed with the faculty of braying.

53. The disjunctive [hypothetical proposition] is divided into the veritable disjunctive proposition [the incompatible and the exclusive]. The veritable disjunctive proposition pronounces that its two parts exclude each other (literally deny or refute each other) both in [case of] truth and [in case of] falsity, [*i. e.* if the one is true the other must be false and also if the one is false the other must be true,] as "this number is either even or odd." The incompatible disjunctive (literally the hypothetical which excludes co-existence) pronounces that the two parts are opposed to each other in truth only, *e. g.* this thing is either a stone or a tree, [if it is a stone it cannot be a tree, but it may be neither of the two, and therefore if it is not a stone it does not follow that it is a tree]. The exclusive hypothetical (literally the hypothetical which leaves no *vacuum*) pronounces that the two parts are opposed to each other in falsity only, as "either Zayd is at sea or else he will not be drowned."

Each of these three kinds [of disjunctives] is either antagonistical [or coincidental]. A disjunctive is called antagonistical if the two parts exclude each other in their nature, as in the above examples ; and it is called coincidental, if this exclusion is a mere coincidence as if we say "non-writer" of a black man. But if we say the man is either black or a writer it is a veritable disjunctive proposition ; if, he is a not-black or a writer, it is an incompatible proposition ; and if, he is either black or a not-writer, it is an exclusive proposition.

54. Any of these eight [hypothetical] propositions is called negative if that [connexion or exclusion] which is pronounced [to exist] in the affirmative, is denied. If it negatives the cohesion, it is called negative-cogent, if it negatives antagonism it is called negative-antagonistic, and if it denies coincidence it is called negative-coincidental.

36. Example "it is certainly not the case that when the sun rises it be night," is negative-cogent, for it denies the existence of a connexion (or cohesion) between sun rise and night, but "if the sun rises it is not night, is affirmative cogent, for it affirms the connexion between sun rise and the negation of the existence of night.

55. The affirmative conjunctive proposition is true (*i. e.* the inference is correct) of two true and of two false [propositions, *e. g.* if Zayd is a man he is an animal; if Zayd is a stone he is a mineral]; and of one whose truth and falsity is not known [*e. g.* if Zayd be writing he is moving his fingers], and of a false antecedent and true consequent, [*e. g.* if Zayd be a donkey he is an animal,] but not the reverse, because from a true [proposition] does not follow a false one.

3. The not-necessary existencial. It is the same as the general absolute with the restriction that [the relation do] not [take place] of necessity in reference to the essence. If it is affirmative, as "man is actually risible (or it happens that man is risible) but not of necessity (he would be man without that property;)" it is composed of the affirmative general absolute and the negative general possible. And if it is negative, as "man is not actually risible but not necessarily" it is composed of the negative general absolute and the affirmative general possible.

4. The non-perpetual existencial. It is the same as the general absolute with the restriction of non-perpetuity in reference to the essence [of the subject]. Whether it be affirmative or negative it is composed of two general absolute [propositions] one of which is affirmative and the other negative. The preceding affirmative and negative examples explain this case.

5. The temporal. It pronounces that the predicate is affirmed or denied of the subject of necessity during a definite period of the existence of the subject, under the restriction of non-perpetuity in regard to the essence [of the subject]. If it is affirmative, as "an eclipse of the moon takes of necessity place during the time the earth is placed between the sun and the moon but not perpetually," it is composed of the affirmative absolute temporal and the negative general absolute. And if it is negative, as "of necessity no eclipse of the moon takes place when the earth, moon and sun are at right angles but not perpetually," it is composed of the negative absolute temporal and the affirmative general absolute.

6. The spread [proposition]. It pronounces that the predicate is affirmed or denied of the subject of necessity and during an indefinite period of the existence of the subject, under the restriction of non-perpetuity in reference to the essence [of the subject]. If it is affirmative, as "every man is of necessity breathing at times but not perpetually," it is composed of the affirmative absolute spread [proposition] and the negative general absolute. And if it is negative, as "man is of necessity not breathing at times but not perpetually," it is composed of the negative absolute spread [proposition] and the affirmative general absolute.

7. The particular possible [or contingent proposition]. It pronounces that there is no absolute necessity either for the existence or non-existence of the thing (or relation). It makes no difference whether it is affirmative, as "by peculiar possibility every man is a writer (*i. e.* every man can or may be a writer,)" or negative, as "by peculiar possibility every man is not a writer." It is composed of two general possible propositions, one of which is affirmative and the other negative.

The general rule is that, if a proposition is restricted by non-perpetuity, it indicates that it is a general absolute proposition, and if it is restricted by non-necessity, that it is a general possible proposition disagreeing in mode but agreeing in quantity.

Second Section.

On the different kinds of hypothetical Propositions.

52. The first part (or the first proposition) of a hypothetical is called antecedent and the second consequent.

49. There are thirteen modal propositions into which it is usual to inquire. Some of them are simple, that is to say, their verity is simply an affirmation or negation; and some are compound, that is to say, their verity is composed at the same time of an affirmation and a negation.

50. There are six simple modal propositions.

1. The absolute necessary [proposition]. It pronounces that the predicate is affirmed or denied of the subject of necessity as long as the essence of the subject exists, as if we say, "every man is of necessity an animal" and "of necessity no man is a stone."

2. The absolute perpetual [proposition]. It pronounces that the predicate is affirmed or denied of the subject in perpetuity as long as the essence of the subject exists. The preceding affirmative and negative examples apply to this case.

3. The general conditioned [proposition]. It pronounces that the predicate is affirmed or denied of necessity under the condition of [the continuance of] a certain attribute of the subject, as if we say "every writer is of necessity moving the fingers as long as he writes." "A writer does not keep his fingers at rest as long as he writes."

4. The general conventional [proposition]. It pronounces that the predicate is affirmed or denied of the subject in perpetuity under the condition of [the continuance of] a certain attribute of the subject. The preceding affirmative and negative examples illustrate this case.

5. The general absolute [proposition]. It pronounces that the predicate is actually affirmed or denied of the subject, as if we say "every man without exception (literally with general absoluteness) is breathing." "Every man without exception (literally with general absoluteness) is not breathing."

6. The general possible [proposition]. It pronounces that there is no absolute necessity that what is contrary to the judgment should not be the case, as "by a general possibility fire may be hot." "By a general possibility what is warm is not cold."

51. The compound modal propositions are seven in number.

1. The special conditioned. It is the same as the general conditioned with the restriction that the relation of the subject to the predicate is not [enounced to be] perpetual in regard to the essence [of the subject]. If it is affirmative, as "every writer of necessity moves his fingers as long as he writes, but not perpetually," it is composed of the affirmative general conditioned and of the negative general absolute propositions. And if it is negative, as "the fingers of a writer are necessarily not at rest as long as he writes, but not perpetually," it is composed of the negative general conditioned and of the general affirmative absolute.

2. The special conventional [proposition] is the same as the general conventional with the restriction that [the relation do] not [take place] perpetually in reference to the essence. If it is affirmative it is composed of the affirmative general conventional and of the negative general absolute, and if it is negative it is composed of the negative general conventional and of the affirmative general absolute. The preceding affirmative and negative examples illustrate this case.

tain figures the definitions of which exclude each other. The same applies to really existing things, *e. g.* if we say man is not a monkey. The terms man and monkey are applied to certain beings to which certain definitions answer, and as the definition of man (rational) excludes that of a monkey (irrational,) it is impossible that a being be discovered which is a man and at the same time a monkey. The notion of monkey has in fact as arbitrary limits as the notion of a triangle or of a mathematical point.

Third Section.

On Privatives and Attributives.

45. If a negative particle is part of the subject, *e. g.* an inanimate being is a mineral; or of the predicate *e. g.* minerals are without intellect (unintellectual); or of both ; the proposition is called privative whether it be affirmative or negative. But if no particle forms part of either extremity then the proposition, if it be affirmative, is called attributive and if it be negative indivisible.

46. A proposition is affirmative or negative by reason of its affirmative or negative relation (copula) and not by reason of its extremities. If we say "every thing that is not living is without intellect," it is an affirmative proposition though both extremities are nonentities, and if we say "a moving being is not at rest" it is a negative proposition though both extremities have [positive] existence.

47. The indivisible negative proposition [*e. g.* the partner of God is not omnipotent] is more general (contains more) than the affirmative with privative predicate, [*e. g.* the partner of God is impotent], for the negation may be true though the subject is an nonentity (*i. e.* though there is no such thing as a partner of God, we can still say if there were one he could not be omnipotent), but the affirmation cannot be true (*i. e.* if we say the partner of God is impotent, we admit that there is a partner): because affirmation is admissible only in regard to a thing of ascertained (or acknowledged) existence, as for instance in propositions whose subject is an actually existing individuum or in regard to a thing of assumed existence as for instance in propositions whose subject is a verity. If the subject does exist the indivisible negative and affirmative privative propositions are equivalent. The difference in the expression [between the indivisible negative and the affirmative with a privative predicate] is this: in the ternary, if it is affirmative, the copula stands before the negative particle, and, if it is negative, it stands after the particle, [as there are no binary propositions in English; the following sentence, of the text which refers to a peculiarity of the Arabic language is omitted].

Fourth Inquiry.

On Modal Propositions.

48. The relation of the predicates to the subjects, be they affirmative or negative, must have a certain qualification as "necessarily," "perpetually." "not-necessarily" "not-perpetually." Such a qualification is called the *materia* of the proposition, and the word expressing it, is called the mode of the proposition.

it, is B in actual existence, [such a propositon is called actuality-proposition القضية الخارجية]. The difference between these two views is evident, for if no square exists in reality, still we are correct in saying every square is a figure in regard to the first view, but not in regard to the second. And if no figure did exist but squares, we would be correct in saying every figure is a square by the second view. From this you can deduce rules regarding the other fenced propositions.

33. The subject of a proposition is expressed in Arabic by the letter jym, which in this case is pronounced ja and written without a dot, but for the sake of distinction from ج part of its tail is cut off. It answers to the Greek γ, and the Latin C. The predicate is expressed by B. If hamzah is used as a symbol it is pronounced da, and in certain cases a dál is written in instead of the hamzah, as فد "therefore D."

34. The commentator says: If we say C is B there are two things to be observed; we may mean the notion and verity of C, or the significates of C. If we meant to say that the notion of C is equal to the notion of B, all that we should learn from the proposition would be that the two terms are synonymous. It is therefore clear that the expression C is B means that all the individua of which C is true are B, that is to say that the notion of B applies to them. That of which C is true, *i. e.* the significates of C is called the essence of the subject ذات الموضوع, and the notion and verity of C is called the attribute or title of the subject وصف الموضوع و عنوانه It is called title, because as we learn from the title of a book what its contents are, so from the notion of a term. The title of a term is either the very essence of it (the essence of its significates,) as "*homo*" is the essence of Zayd, 'Amr, Bakr, &c., or it is a part of the essence as "animal" is in reference to the Zayd, Bakr and other individua; the animal nature being only a part of the quiddity of Zayd, &c. Or it is external to it, as if we say every thing that walks is an animal. The imports of propositions are therefore reducible to two knots عقد 1. The knot of (arbitrary) appointment;—in this its own attribute is predicated of the subject (Kant calls this the analytical judgment.) 2. The knot of predication;—in this the attribute of the predicate is predicated of the essence (significates) of the subject, (this is the synthetical judgment of Kant.) The former is a "limitative sentence" تركيب تقييدي (Kant calls it an explanatory judgment,) and the latter is an "informing sentence" تركيب خبري (*i. e.*, it tells you some thing new, it gives you information regarding the subject. Kant calls it *Erweiterungsurtheil*, *i. e.*, enlarging judgment, for it enlarges our knowledge of the subject.) Three things are here to be observed.

1. The essence (significates) of the subject. Under this term are not to be understood the singulars of C absolutely [but relatively]. If C is a species, or if it is such a difference or property as is co-extensive with the species, the individual singulars are to be understood under "every C," and if it is a genus or a co-extensive general accident, the individual singulars and the specific singulars الافراد النوعية are to be understood: *e. g.* what we predicate of "*omnis homo*" or "*omnis rationalis*" or "*omnis ridens*," we predicate solely of Zayd, 'Amr. &c., but what we predicate of "*omne animal*," "*omne ambulans*" we predicate both of the individual singu'ars, Zayd, 'Amr, Bucephalus, &c., and also of the *naturæ specificæ* طبايع نوعية (characteristics of the species,) of *homo* and *equus*, &c. Hence the schoolmen say what one universal predicates of another is predicated of the species and of the singulars under it حمل بعض الكليات على بعض انما هو على النوع و افراده. There are however philosophers who consider that the predicate refers only to the individual singulars. This view is supported by the circumstance that the *naturæ specificæ* are imaginary things.

2. The predicability of the attribute about the subject. The opinions on this point are divided. Fáryáby says that possibility constitutes predicability without regard to actual existence. Avicenna on the other hand thinks that actual existence, present, past or future, constitutes predicability, *e. g.* according Fáryáby, if we predicate B of every black man, it means every man who may happen to be black even Europeans, for it is not impossible that they be black; but according to Avicenna the judgment would not apply to Europeans, because there is no instance on record that they were black, nor is there any reason to suppose that they will ever be so. The opinion of Avicenna is the one which is generally received.

3. Predicability of the predicate about the essence (significates) of the subject. It may be necessary, contingent, perpetual, actual, &c., as will be explained in the paragraph on modals.

Now if we say every imaginable C if it should exist will be found to be B, the judgment does not refer to the existing individua of C only but also to its hypothetical significates, and it is true though no individuum should exist. This will be intelligible if we say no triangle is a square, because these two terms indicate by appointment cer-

is called predicate ; the relation between the two, showing the bearing of the predicate to the subject—which is called judicial relation; and the word which expresses it is called copula, as "is" in the sentence "Zayd is informed." Such a proposition is called ternary. In some cases, which are very easily intelligible, the copula is omitted, and the proposition is called binary.

41. If the relation is of such a description that you can say that the subject is in agreement [with the predicate], the proposition is called affirmative, as man is an animal; and if it is of such a description that you can say that it is not in agreement it is negative, as a man is not a horse.

42. If the subject of a categorical proposition is a definite individuum, it (the proposition) is called peculiarized or individual (singular). If the subject is a universal, and if the quantity of the singulars (or individua) of which the judgment is true is shown in it, the word expressing the quantity is called wall and the proposition is called fenced or walled-in. It is of four kinds: if it is shown in it that the judgment [applies] to all the singulars, it is [called] an universal [categorical proposition]. This again is either affirmative [or negative: in the affirmative] the wall is "every one," *e. g.* every fire is hot. In the negative the wall is "no," "none," "not one," *e. g.* no man is a mineral. If it is shown in it that the judgment [applies] to some things, it is particular, and [again it is] either affirmative, and [in this case] the wall is "some" "one," *e. g.* some animals are men, or one animal is a man ; or it is negative and the wall is "not all," "some (are) not," *e. g.* not all animals are men, or some animals are not men.

43. If the quantity of the singulars is not shown in it and if we can neither say that it is a universal nor that it is a particular proposition it is called a physical proposition, *e. g.* "animal" is the genus and "*homo*" is the species. But if we can say it is universal or particular [but it is not stated] it is called ambiguous, *e. g.* man is at a loss, or man is not at a loss. Such a proposition is virtually a particular proposition, for if it predicates that man is at a loss, it predicates that some men are at a loss and *vice versâ.*

32. The reason why such a proposition as is mentioned in the text is called a "physical" proposition is clear from the following words of Qotby "in the physical proposition judgment is passed on the *nature* of the subject itself and not its significates."

SECOND INQUIRY.

On the four fenced Propositions.

44. The expression every C is B, is sometimes employed in reference to the verity, and its meaning is that every possible (imaginable) singular which may exist and is C, is B by reason of its existence; *i. e.* whatever is the substrate of C is also the substrate of B. [Such a proposition is called verity-proposition القضية الحقيقية] Sometimes the expression is used in reference to actual existence, and it means that every C in actual existence, be it at the time of the judgment or before or after

SECOND BOOK.

ON PROPOSITIONS AND RULES REGARDING THEM.

This book is divided into an introduction and three chapters.

INTRODUCTION.

Definition of proposition and its primary division.

38. Proposition (literally a decision) is a speech, which allows that he who utters it be told that he is true or false (right or wrong). It is called categorical, if its two extremities (terms) are resolvable into two simple [ideas], as Zayd is informed, or Zayd is not informed, [or from "the Sun is rising" follows "the day is approaching,"] and it is hypothetical, if they are not thus resolvable, [*e. g.* if the Sun rises day will approach].

30. The commentator shows that a hypothetical proposition is resolvable into not less than two categorical judgments: such a truth necessitates such another and such a truth is opposed to such another.

39. The hypothetical [proposition] is either conjunctive (conditional), or disjunctive. It is called conjunctive, if we pronounce in it a proposition (*i. e.* one of the two propositions of which it consists) to be true or untrue, under the assumption that another (the other) proposition be true. [Example of an affirmative conjunctive] "if this is a man, it is an animal." [Example of a negative conjunctive], "if this is a man, it cannot be a mineral."

A hypothetical proposition is called disjunctive if we pronounce in it that two propositions exclude (literally deny or refute) each other, either both in [case of] truth and [in case of] falsity or in one of the two only, or that their mutual exclusion is denied, *e. g.* "this number is either even or odd." "That this man is either a writer or a negro, is not admissible."

31. In the conjunctive the judgment is occupied with deciding whether or not the two propositions of which it consists are connected, and in the disjunctive whether or not they are separated or exclusive of each other.

FIRST SECTION.

ON THE CATEGORICAL (PROPOSITION).

FIRST INQUIRY.

Its parts and kinds.

40. The categorical proposition consists of three parts: the part on which judgment is passed,—which is called subject; the one by which judgment is passed,—which

which establishes the ***summum genus*** establishes also the low genus, but not ***vice versâ;*** again every difference which divides a lower genus divides also the ***summum genus*** but not ***vice versâ.***

28. "Divide" has not quite the same meaning which it has in English Logic, the Arabs use "division" for "difference," see § 19.

FOURTH SECTION.

On Definitions (i. e. the ways of defining).

35. The *definiens* (definition) of a thing is [an expression] the apprehension of which involves the apprehension of the thing defined, or its distinction from every thing else. The *definiens* must not be the essence itself [*i. e. homo* is not a *definition* for man], for the *definiens* is known prior to the *definitum*, and a thing is not known prior to itself. It further must not be more general (more extensive) than the *definitum* else it does not answer the purpose of definition (or limiting), nor must it be more peculiar (more limited), else it conceals (or excludes some of the individua). The *definiens* must be co-extensive in generality and peculiarity.

36. The *definiens* is called a *limes perfectus* (perfect boundary) if it consists of the near genus and near difference, [as rational animal for man]; and *limes imperfectus* (imperfect boundary) if it consists of the near difference only, [as *rationalis* for *homo*], or of the near difference and the distant genus, [as a rational body for man]. And it is called complete description (literally sketch,) if it consists of the near genus and a property, [as the risible animal for man], and imperfect description, if it consists of the property alone, or of the property and the distant genus, [as risible body for man.]

37. Care must be taken not to define a thing by what is equally known or unknown, as if we were to define "motion" by "absence of rest," or "couple" by "what is not single." Nor must a thing be defined by another thing, which is known only through the former. It is equally objectionable whether it be immediately known through it, *e. g.*, if we were to say "report" means an "account" and "account" means "report;" or mediately, *e. g.*, if we were to say the number two is the first pair; pair is what can be divided into two equal parts, two parts are called equal if neither exceed the other and the parts are two.

Care must also be taken not to use barbarous unusual words, whose indication (meaning) is not intelligible to the hearer, for in this case the purpose is lost sight of.

29. The example of "the number two" is not very clear in the original, and it has become still more obscure by the want of a dual in the English language.

"*homo*" the primary answer to the question "what is a Turk" being "*homo.*" Variety is a species limited by universal accidental attributes, as Turk, Greek.

30. Species has four degrees, for either it is the most general of all species, and in this case it is called the high species (*summa species*), as "body;" or it is the most peculiar, and in this case it is called the low species, as "man," this is also called the *species specierum;* or it is more general than the low species and more peculiar than the high, this is called the intermediate species, as "animal" and "living body;" or it is detached from all other species, this is called the singular (or solitary) species, as logos, if we say that substance is the genus of logos.

25. Qotby says that there is no example of the singular species in existence ; but that it is illustrated by logos, for under logos are the ten logoi which agree in the verity of logos, yet logos is not more general than any other species, there being no species but only individua under it nor is it more peculiar there being no species above it but only the genus, *viz.* substance.

31. Genus has the same four degrees, but the high genus (*summum genus*), *e. g.* "substance," and not the low genus, *e. g.* "animal," is called the *genus generum* in the gradation of the genera. Examples of the intermediate genus, are "living being" and "body," and an example of the singular genus is "logos," supposing that "substance" is not the genus of "logos."

32. The relative species is to be found without the veritable species, as in the intermediate species. Again the veritable species is to be found without the relative one, *e. g.* in indivisible verities. These two kinds of species do not stand to each other in the relation of absolute generality and peculiarity, but either of the two is in some respects more general than the other, because they are both true of the low species.

26. The author refutes here the opinion of Avicenna who mentions in his Shifá, that the relative species is absolutely more general than the veritable species.

27. Indivisible verities are, logos, soul, unity and rationality, they are not resolvable into a genus and a difference, and therefore they cannot form a relative species.

33. If [only] a part of what ought to be said in answer to the question "what is it" is said, and if that be [a] coincident [term,] it is called *jacens in via* [*questionis*], *quid est*, *e. g.* if we ask regarding man ,"what is it," and receive the answer "animal" or "rational," in reference to (or instead of) "rational animal." If [only] a part is said in answer to the same question, and if, what is said, be a term for it by implication, it is called *inclusum in responsione* (*i. e. pars responsionis*) [*ad questionem*] *quid est*, as "living being," "sensitive," "endowed with voluntary motion," animal being indicated by these terms by implication.

34. The *summum genus* may have a difference which establishes it (or is an essential part of it), for it may be composed of two or more co-extensive things; but it must necessarily have a difference which divides it (separates its significates). The low species must necessarily have a difference which establishes it, but it can have no difference which divides it. The intermediate [genera] must have *differentiæ* which establish them and *differentiæ* which divide them. Every difference

hence it would follow that the more peculiar is true [of certain things] and that the more general is not true [of the same things]—this is impossible. As to the second [assertion *viz.*, that the contradictory of a more general term contains less than the contradictory of a more peculiar term], were it unfounded the contradictory of the more general [term] would be true of every thing of which the contradictory of the more peculiar [term] is true, and hence it would follow that the more peculiar [term] is true of every thing of which the more general is true—this is impossible. There is no generality whatever between the contradictories of terms one of which is more general in 'some respect,' because it is certain that such a generality exists between the absolutely more general [term] itself [*e. g.* animal] and the contradictory of the more peculiar [term, as for instance non-man;] whilst there is universal heterogeneousness between the contradictory of the absolutely more general and the more peculiar [term] itself. The contradictories of two heterogeneous [terms] are heterogeneous, and their heterogeneousness is [called] particular heterogeneousness, for if [two terms] are in no case true simultaneously [of the same thing], as non-existence and non-nihilum (non-existence and existence), it is [called] universal heterogeneousness; and if they are true simultaneously, as non-man and non-horse, it is called particular heterogeneousness, because one of the two heterogeneous terms is necessarily true [of certain objects] of which the contradictory of the other heterogeneous term is true. Particular heterogeneousness is, therefore, surely an adherent [of the contradictories of two heterogeneous terms.]

Fourth Inquiry.

28. [The term] "particular" is not only used in the abovementioned sense [see § 15]—in which it is called "veritable particular"—but also to denote any more peculiar [term] which is under a more general one, and in this case it is called "relative particular." The latter term is more general than the former, for every veritable particular is a relative particular, but not *vice versâ*. The former is the case (*i. e.* every veritable particular is a relative particular), because every individuum comes under its quiddity, which denudes [the individua under it] of their individuality, (*i. e.* which abstracts from the individuality of the individua); and the second is the case (*i. e.* the reverse is not true), because the relative particular may be a universal, but the veritable particular cannot be a universal.

Fifth Inquiry.

29. The species which is of the description mentioned above [§ 16] is called the veritable species; but the term is also used of any quiddity, if to the question "what is it" regarding the said quiddity [*e. g.* what is "man?"] and some other quiddity, [*e. g.* what is "horse"], the genus [*e. g.* "animal"] is primarily said in answer. This is called the relative species.

24. The commentator says that "primarily" is used with a view of excluding the variety صنف. If you bring Turk and horse under a common term you cannot do so primarily, you must do it through the medium of

Third Section.

Five Inquiries on Universals and Particulars.

First Inquiry.

24. [There are] universals, whose existence is impossible in reality, but not the conception thereof of itself, as "an equal to God." [There are universals] whose existence may be possible but they do not really exist, as "a griffon." [Under some universals] there is only one [individual], and it is impossible that there should be another, as God; or it is possible that there be others, as the sun; or there are many but they are limited in number, as the seven planets; or they are unlimited in number, as the rational souls.

Second Inquiry.

25. If we say of "animal" for instance, that it is a universal, three things are to be observed. Animal is to be considered in itself, and as a universal, and as the compound of these two things. The first is called a physical universal, the second a logical universal, and the third a mental (metaphysical) universal. The physical universal is existing in reality, for it (animality) is a part of every animal which exists, and a part of what exists has [of course] existence. In regard to the other two universals, opinions are divided as to their existence in reality. The inquiry on this subject does not belong to logic.

Third Inquiry.

26. Universals are co-extensive, if one is true of just as much (*i. e.* of as many individuals) as the other, as "*homo*" and "rational." There is absolute generality and peculiarity between them (*i. e.* one is more extensive than the other and contains it wholly), if one of the two, is true of all of which the other is true, but not *vice versâ;* as "animal" and "man." There is generality and peculiarity between them in some respect if either is true only of a part of that of which the other is true ; as man and white. And they are heterogeneous if neither of the two is true of any thing of which the other is true ; as man and horse.

27. The contradictories of two co-extensive [terms] are co-extensive; for else one of them (contradictories) would be true of that about which the other is false, and it would follow that one of the two co-extensive [terms] is true of that about which the other is false—this is impossible. [*E. g.* every non-man is an irrational being and every irrational being is a non-man.] The contradictory of an absolutely more general [term] is more peculiar than the contradictory of an absolutely more peculiar [term,] for the contradictory of the more peculiar [term] is true of every thing of what the contradictory of the more general term is true, but not *vice versâ*, [non-man contains more than non-animal]. Were the first [of these two assertions] not founded, the peculiar [term] itself [*i. e.* not its contradictory; man *e. g.*,] would be true of some things of which the contradictory of the more general [term *e. g.* non-animal] is true, and

20. Difference is described as a universal predicated of a thing to the question "what thing is it in its substance?" It follows that if a verity is composed of two—or several—co-extensive things, each of these two things is its difference, for it distinguishes it from those things which are associated with it in "existence."

22. The commentator says that "in its substance" is added to the question, lest an inseparable property might be said in answer. The difference is therefore also called المميز الجوهري "*distinguens substantialis*" whereas the property is called المميز العرضي "*distinguens accidentalis.*"—Ancient Logicians, among them Avicenna in his *Shifá*, defined difference as an universal said of a thing in reply to the question "what thing of its genus is this in its substance."

21. The difference which distinguishes a species from what is associated with it in the genus, is called near (specific), provided it distinguishes it in the near genus *e. g.* "rational" is the difference of "man" [in the subaltern genus "animal," distinguishing it from other animals]. And it is called remote (generic) if it distinguishes a species from what is associated with it in the remote genus, *e. g.* "sensitive" is the difference of "man" [in the remote genus "living being"].

22. The third [universal is external to the quiddity but joined to it]. If it is inseparable from the essence it is called adherent (property), else it is called separable accident. The adherent adheres to the existence [of a thing], as blackness to the negro, or it adheres to the quiddity, like being even to four. The adherent is [called] evident, if the apprehension of the adherent together with the apprehension of the thing to which it adheres, is sufficient to convince the intellect of the cohesion between the two, as the divisibility of four into two equal parts; and it is [called] not-evident, if a medium is required to convince the intellect of their cohesion, as the equality of the three angles of a triangle to two right angles. Some say that an adherent is evident, if the apprehension thereof adheres to the apprehension of the thing of which it is the adherent. The first [definition] is more general. The separable accident may either pass quickly, as the blushing of shame and flushing of anger, or slowly, like greyness of hair, [under the use of certain medicines which are supposed to have this effect], or youth.

23. Both the adherent and separable [accident], if they are peculiar to singulars of the same verity, are called peculiar, as risible, else they are called general accident, as locomotion. The "peculiar" is described as a universal said, as a accident, only of things of the same verity. Common accident is described as a universal, said as an accident, of singulars of the same verity and of other things also in the way of accidentality. The universals therefore are five: species, genus, difference, peculiar (accident) and common accident.

23. The commentator justly observes that according to the author's division of the accident the universals are seven and not five. We have the inseparable peculiar accident, the inseparable general accident which answer to "property"; and the separable peculiar and separable general which answer to the "accident" of our Logicians. Sayyid Jorjány says in the *Kobrá* on this subject "that universal which is external to the verity of its individua is called "Peculiar," if it is restricted to one verity. It distinguishes the verity from others by accidentality. Consequently "a Peculiar" is an universal which is said in answer to the question what thing is it in its accident? as risible in reference to man. If [the universal] be common to two or more verities it is called general accident as "walking" which is common to animals."

بدون الاخص فيلزم وجود الكل بدون الجزء و انه محال ولا اعم لان بعض تمام المشترك بين الماهية و نوع آخر
لو كان اعمّ من تمام المشترك لكان موجودًا في نوع آخر بدون تمام المشترك تحقيقًا لمعنى العموم فيكون
مشتركًا بين الماهيّة و ذلك النوع الذي هو بازاء تمام المشترك لوجوده فيهما فاما ان يكونَ تمامُ المشترك
بينهما و هو محال لان المقدر ان الجزء ليس تمام المشترك بين الماهية وبين نوعٍ مّا من الانواع و اما
ان لا يكون تمام المشترك بل بعضًا منه فيكون للماهية تَمامَا المشترك احدهما تمام المشترك بين الماهية
و بين النوع الذي هو بازائها و الثاني تمام المشترك بينها و بين النوع الثاني الذي هو بازاء تمام المشترك
الاول و حينئذ لو كان بعض تمام المشترك بين الماهية و بين النوع الثاني آعم منه لكان موجودًا في نوع
آخر بدون تمام المشترك الثاني فيكون مشتركا بين الماهية و ذلك النوع الثالث الذي بازاء تمام المشترك
الثاني و ليس تمام المشترك بينهما بل بعضه فيحصلُ تمام مشترك ثالث و هلّم جرا فاما ان يوجد
تمام المشتركات الى غير النهاية او ينتهي الى بعض تمام مشترك مساوٍ له والاول محالٌ و الاتركّب الماهية
من اجزاء غير متناهية

"This portion must either be heterogeneous from the totality of that part of the quiddity which it has in common with another species or it must be more peculiar (less extensive) or more general (more extensive) or co-extensive. It cannot be heterogeneous, for we are speaking of the predicable parts [of the totality] and it is impossible that what is predicable of a thing should be heterogeneous from it. Nor can it contain less, for the more general (or more extensive) is found where the less extensive is not found [*e. g.* "animal" is found in "horse" but "man" is not found in it.] It would therefore follow [from this assertion] that the whole [e. g. "animal"=a living, sensitive, corporeal substance with voluntary motion] can exist without some of its parts parts [*e. g,* "living" or "sensitive".] This is impossible. Nor can it be more general (or more extensive) [as "living being" in reference to "animal,"] for if a portion [*e. g.* voluntary motion] of the totality [*e. g.* "animal"] of what a quiddity [*e. g.* "man"] has in common with another species [*e. g.* "horse"] is more general than the totality ["animal"] it must also be found in another species [*e. g.* "tree"] in which the totality is not found, for this is the meaning of "more general." But as it is found in these two it is common to them, *i. e.* to the quiddity and that species which is independent of the totality (the genus of the quiddity.) It is impossible that what they (the quiddity and this other species—tree) have in common, should be the totality, for the condition is that it should be a portion and not the totality. But if it is not the totality but only a portion of it, the quiddity must have two totalities (genera) in common [with two several species] :—The totality which it has in common with the species which is independent of it (or co-ordinate with the quiddity) and the totality which it has in common with a second species, which is independent of the first named totality. And then if the portion of the totality which the quiddity has in common with a second species is more general than the totality, it must be found in a species [e. g. mineral] in which the second totality is not found, and it must be common to the quiddity and this third species which is independent of the second totality. But again it cannot be the totality of what they have in common, but it must be a portion of it, and so we come to a third totality and so on. Now either we must admit that a quiddity may have an endless number of totalities in common with other species or we must finally arrive at a portion of a totality which portion is co-extensive with the totality. The former supposition must be false, unless we assume that a quiddity consists of an endless number of parts."

21. The Commentator points out that the expression [interminable] chain is not used in the text in its proper meaning.

18. The genus is called near, if the answer [to the question] regarding a [given] quiddity and regarding certain [other species] which are associated with it under that genus is the immediate answer regarding that quiddity, and regarding *all* [the species] which are associated with the said quiddity, under the same genus, as animal in reference to man.

The genus is called remote, if the answer [to the question] regarding the quiddity and regarding certain [other species] which are associated with it under that genus, is different from the answer regarding the quiddity, and those other [species mentioned above as coming under the near genus]. If the genus is remote by one degree, two answers can be given, as living being in reference to man; and if it is remote by two degrees, three answers can be given, as body in reference to man; and if it is remote by three degrees, four answers can be given, as substance in reference to man, &c.

23. Man, horse, tree and quartz can all be brought under the same denomination or genus "body (matter);" man, horse and tree can be brought under the denomination of "living body"; and man and horse can be brought under the denomination of "animal." Now if you ask

What is man ?
What is quartz ? } Answer "body."

but horse and tree participate at least as much in the quiddity of man as quartz, and if you ask

What is man ?
What is horse ? } The answer is "animal."

What is man ?
What is tree ? } The answer is "organised body."

19. If it (the universal notion) is not (or does not comprehend) the totality of that part [of the quiddity], which is common to it (the quiddity) and to another species [*i. e.* if it is not a genus, one of two things must be the case]; either it cannot be common [to both] at all [being peculiar to the quiddity as rational is according to the Arabs to man] or it [is only] a portion of the part which is common to both; although co-extensive therewith. Else (if it were more extensive it would follow that) it must be common to the quiddity and to some other species [not included in the genus] but, agreeably to the above supposition, it must, in reference to such other species, not comprehend the whole part which may be common [to the quiddity and that species], but only a portion of it [and so by assuming that the notion is part of the quiddity of another species we should only rise to a higher branch on the tree of Porphyry]. (This reasoning) does not lead to an [interminable] chain, but to something which is co-extensive with the totality of the part which is common (or genus). This [universal] consequently divides the genus, and whether it distinguish the quiddity from what is associated with it under a genus or under "existence," [which may be considered the *summum genus*] it is [called] difference (literally division).

24. This paragraph and the commentary thereon are considered the *pons asinorum* of Arabic Logic. I therefore insert the words of the Commentator in the original with translation and examples between brackets.

فذلک البعض اما ان یکون مباینا لتمام المشترک او اخص منه او اعم منه اومساویا له لا جائز ان یکون مباینا

له لان الکلام فی الاجزاء المحمولة و من المحال ان یکون المحمول علی الشیء مباینا له ولا اخص لوجود الاعم

said of one or several things which agree in their verities in answer to [the question] "what is it."

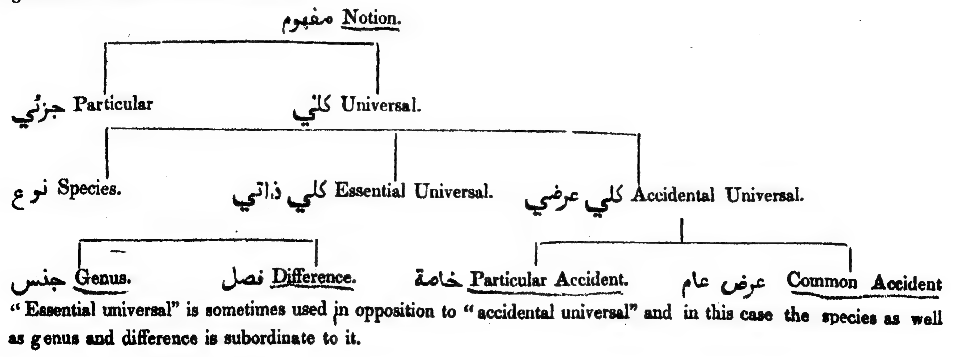
19. Máhyyat "quiddity" is derived from má *quid* or from má howá *quid est hoc.* English logicians use "essence" to express máhyyat. But in Arabic there are two other words which have nearly the same meaning, *viz.* dzát and *h*aqyqat and as for each of these three words a representative was to be chosen in English it was found convenient to use essence as the representative for dzát. *H*aqyqat is rendered by verity *(see note* 21*).* The word máhyyat is the most definite, being the contents of the veritable species, thus rational, living, bodily substance endowed with voluntary locomotion are the parts which constitute the máhyyat of Zayd, Bakr, &c., Jorjány, *p.* 205, defines máhyyat "the quiddity of a thing is that by which the thing is what it is (*i. e.* its ipseity). Of quiddity in itself it can neither be said that it exists or does not exist, nor that it is an universal or particular, nor that it is general or peculiar." The same author, *p.* 99, gives the same definition of *h*aqyqat as of máhyyat and then he adds "the verity of a thing is that by which the thing is what it is in reference to its verification (or existence, *i. e.* we take an actually existing thing, *e. g.* a straight line on paper and ascertain its properties). Ipseity هوية has the same meaning in reference to its individuality: and quiddity has the same meaning without any reference." On the whole the sense of verity seems to be more vague than that of quiddity, and hence it is a favorite term of mystical philosophers. Dzát means "self" "essence," and dzáty "essential." It will be observed from note 22 that it is sometimes used in a less extensive meaning than quiddity, but generally it has a more extensive meaning. Jorjány says in *p.* 112 "the essence of a thing is the self of a thing and it consequently comprehends its [inseparable] properties. The essential [part] of a thing is that what peculiarizes it and distinguishes it from every thing else."

20. The Commentator blames the author for giving separate definitions for species, in case there is only one individuum under it, as "sun," and in case there are many individua, and says that in doing so he has wandered beyond the limits of Logic.

21. *H*aqáyiq "verities" is the plural of *h*aqyqat, and is derived from *h*aqq "*verum*" (germanicé das Wahre) this word is the opposite of bá*t*il "*vanum*." The word might have been translated by characteristics, but thereby would have been obliterated the affinity of this idea to ta*h*aqquq "to verify," "to ascertain," to mota*h*aqqaq "ascertained" to *h*aqq "*verum*," and to *h*aqyqy "veritable" which are all of very frequent occurrence.

17. In the second case [if the universal is part of the quiddity it must be one of two things, either a genus of the quiddity or its difference], it is called a genus if the universal is the totality of that part [of the quiddity] which is common to the quiddity and to another species. It is said in answer to [the question] "what is it?" in regard to association only. Genus is described as a universal, which is said of many things differing in their verities, in answer to [the question] "what is it."

22. The name for a universal which comprehends part of the quiddity is الكلي الذاتي "essential universal." It is defined in the Yságújy الكلي الذاتي هو الذي يدخل تحت حقيقة جزيات مفهومه "A universal is called essential if it is included in the verity of the particulars to which it applies." The universal which is external to the quiddity is called الكلي العرضي "accidental universal" or accident and property. I give here a table of the Universals.



"Essential universal" is sometimes used in opposition to "accidental universal" and in this case the species as well as genus and difference is subordinate to it.

[as the word " omnibus"] or as a law term, or as a term of science ; in the first case it is called " a conventionally transferred (word)," in the second " a juristically transferred (word)," and in the third " a technically transferred (word)." If a word has not quitted its original subject (lost its original meaning), it is called, in relation to it, proper, and in relation (to the signification) to which it has been transferred, trop. Example, lion, in reference to the animal of that name and in reference to a brave man.

13. A word is in reference to another word synonymous (literally riding on the same camel, one behind the other,) with it if they agree in meaning, and heteronymous (literally distinct) if they differ in meaning.

14. A compound *(oratio)* is either complete, that is to say, it has a sense by itself (literally, silence after it is admissible) or incomplete. If a complete compound predicates something true or false, it is called information or proposition, and if it does not predicate any thing it is called interjection, If an interjection has by appointment the meaning of a request that a thing be done, and if (it be uttered) with an authoritative voice, it is an order (or an imperative) as, beat thou! if (it be uttered) in a humble voice it is a question or prayer, and if in a middling voice, a request. If it has not the meaning of a request that a thing be done, it is a warning (exclamation) expressive of whining, or weeping, or wondering, or exclaiming, or swearing. If a compound is not complete, it is either a limitation as " rational animal," or it is not a limitation, as if it consist of a noun and a tool, or of a verb and a tool (adverb).

Second Section.

On Simple Meanings (Predicables).

15. A notion is particular (singular) if the apprehension thereof of itself excludes the taking place of association, and it is universal (common), if it does not exclude association. The terms indicating these two things are called particular and universal respectively.

16. Mafhúm "notion" means literally *comprehensum*, it is therefore the exact equivalent of comprehension as used in western Logic.

17. The reason why the author defines "particular" by an apprehension the *idea* of which excludes plurality, is that terms like "sun" may not be put down as particular.

18. The Commentator observes in reference to the terms "particular" and "universal" "Universal is generally a part of the particular, thus [the notion of] *homo* is a part of Zayd, in like manner animal is a part of *homo* and body is a part of animal. The particular is therefore a whole كل and the universal a part جزء"

16. An universal [notion] is either the whole of the quiddity of the particulars under it, or is included in it (*i. e.* is part of it), or is external, [but joined] to it. The first is called species, whether it contains many individua [or only one, in the former case] it is said in answer to [the question], " what is it ?". in regard both to association *and* peculiarity as *homo*, [in the latter case] if it does not contain several individua it is said in answer to [the question] " what is it," in regard to its peculiarity only, as " sun." Species is therefore an universal, which is

to the apprehension of the thing named, if this be not the case the word will not convey the meaning thereof. But it is not necessary that it be in such a condition that its actual existence be connected with the actual existence of the thing named. For instance the word "blind" is (*per nexum*) the indication of sight, yet these two things are not connected in their actual existence.

10. Coincidence does not (always) comprize implication, as, for instance, in indivisibles (*i. e.* things the quiddity of which is not composed of parts see notes 18, 19 and 27) and it may or may not comprize *nexus;* this is uncertain, for it is not known whether there exists an *adherens* (inseparable property) of every essence, the apprehension of which is connected with the apprehension of that essence. [The opinion of Imám Rázy] that the apprehension of every essence comprizes [*per nexum* at least if nothing else,] the apprehension that it is [that essence and] no other, is not admissible. From this it is clear that implication does not comprize *nexus*, they, in fact, are (only) found along with coincidence, for the *sequens* cannot possibly exist as *sequens* without something of which it is the *sequens.*

12. The Commentator observes, that the text ought to run ومن هذا عدم تبين استلزام التضمن الالتزام "Hence it is not clear whether implication comprizes *nexus.*"

11. If any part of the (term which is) *indicans* by coincidence, is intended to indicate a part of the total meaning, it (the term) is [called] complex, as a thrower of stones, else it is [called] simple. If the simple word is not by itself fit to be a predicable, it is [called] a tool (syncategorematic), as "in" and "not," and if it is fit to be a predicable, and indicates by its form one of the three times, it is a verb, else it is a noun.

13. The Commentator shows that in an expression like 'abd Allah, if used as a proper name is not a complex term.

14. Tool is the instrument with the help of which a thing is made and not the matter out of which it is made, the term is therefore very appropriate for a syncategorematic. In Grammar particles are called حروف "letters" and a verb is called فعل "action." The reason of a double terminology is that grammar was worked out by the Arabs independently, whereas they took Logic from the Greeks, and these two Sciences were cultivated by the *same* class of men long after their terminology had been fixed.

15. The Commentator observes that the words "by its form" are used in the text with a view of excluding words whose substance indicates a time as "yesterday."

12. A noun has either one meaning or more than one. In the first case if it individuates that meaning it is called a proper-name, else (there are two cases possible: firstly), if its conceivable (literally intellective) and real individua are [all] equally represented by it, it is called univocal (literally agreeing, consentient,) as "*homo*," "sun;" [secondly,] if it applies to some [of the individua] more forcibly, and in preference to others, it is called doubtful as existence in reference to the being which exists of necessity (God), and the beings of contingent existence (the creation.) In the second case, [if a noun has many meanings] it may be, by appointment, equally applicable to those several meanings, like spring [the spring of a clock, a spring of water],—in this case it is called equivocal: or it may have been appointed for one meaning and then have been transferred to a second. If the original meaning has become obsolete the noun is called a transferred word, it depends whether it has been transferred by common usage

(predicate), or an assertion regarding it; and [thirdly] the judgment, for judgment is impossible if one of these (three) things [subject or predicate or judgment] is unknown.

8. *H*ojjat "argument" is derived from a root which means to contend.—The author of the çoghrà takes dalyl "demonstration" and *h*ojjat as synonymous.

9. Qawl "*oratio*" is used to denote an expression which consists in most cases of more than one word, but it is not necessarily a sentence, thus "rational animal" is a qawl.

10. It will be observed that judgment is used in the text in the two different meanings which are explained in note 5. The commentator says "judgment is one of those words which have two meanings, one is the affirmative or negative relation, apprehended between two things, and the second is the decision that that relation is taking place or is not taking place." He continues to say that the author of the text uses the word in the second meaning where he says "judgment is impossible".

FIRST BOOK.

It contains three Sections:

FIRST SECTION.

On Words.

8. That a word is the indication of a meaning (idea), by reason of [its] appointment for it (so as to represent that idea), is [called] coincidence, as, for instance, that "*homo*" is the indication of (is used to express the idea of) "rational animal." [That a word is the indication of an idea] by reason of its appointment for that in which it (the idea) is included is [called] implication, as for instance, that "*homo*" is an indication of an animal. [That a word is the indication of an idea] by reason of its appointment for that to which it (the idea) is external is [called] *nexus*; for instance, that "*homo*" is an indication of "capable of instruction" and of "acquiring the art of writing."

11. The word معنى "meaning" which has in common use the same signification as in English, is explained by the Commentator p. 93: المعاني هي الصور الذهنية من حيث انها وضع بازايها الالفاظ "The images in our intellect in reference to the words which have been appointed to represent them are called meanings."

Lozúm لزوم "adhesion" with its derivatives is one of the most troublesome terms in Arabic Philosophy. لزم ج لب means "C adheres to B or is inseparably connected with it," لزم لذلك means "hence it follows." C in the first example is called lazim "*adhærens*" and B is called malzúm "substrate." Thus fire is the substrate and heat the *adhærens.* Talazum means cohesion and is somewhat differently used as تلازم بين ج وب "C and B are coherent or inseparably connected," in this instance either C or B may be considered as the *adhærens.* إستلزام means "to necessitate" "to require" "to render it necessary" يستلزم ج لب means "C requires B" or "B is a postulate of C," in this instance C is the substrate and B is the adherent. الزام is used for "to refute."

9. It is necessary in the indication *per nexum* that the external thing be in such a condition that the apprehension thereof adhere in the intellect

evident [knowledge], and marking the boundaries between sound and bad reasoning. This canon is Logic. It is described as the canonic organon, (*i. e.* an instrument consisting of rules), the observance of which guards our intellect from error in reasoning.

Logic is neither entirely intuitive, else there would be no need for learning it, nor is it entirely deductive, else it would be a circle or [interminable] chain, but some [of its doctrines] are intuitive and others are deductive, and founded upon the intuitive ones.

Second Inquiry.

On the Subject of Logic.

6. The subjects of a Science are those of its accidents which are inquired into, whether they belong to it immediately, that is to say, belong to its essence, or whether they belong to its parts or whether they belong to it [mediately, but are] co-extensive. The subjects of Logic are apprehensional and declarative notions, for the Logician inquires into them so far as they lead to unknown apprehensional or declarative [notions], and in so far as there rests upon them that which leads to apprehension ; he inquires, for instance, whether [such apprehensions as lead to other apprehensions] are universals, particulars, essentials, accidents, genera, species, or differences—and in so far as there rests upon them that which leads to declaration (assertion) whether it rests upon them proximately—they (the declarations which lead to other declarations) being, for instance, propositions or conversions of propositions, or contradictories of propositions ; or remotely—they being, for instance, subjects and predicates.

7. It will be observed that the use of the term accident differs widely from the use in western logic, the commentator says, accidents are of six kinds, for the accident of a thing either belongs to its essence (to the thing itself) or to a part of it, or it belongs to some property of the thing which is not included in its quiddity. As to the accident of a property it may either be co-extensive, مساوي (*i. e.* it may be a mediate accident of all the individua under that species as risible in reference to man, it being the effect of joy and common to all men,) or it may be more peculiar اخص (limited) or more general اعم (extensive) or it may be heterogeneous مباين. The first three of these accidents, *viz.* the accident of the essence, the accident of a part of the essence, and the co-extensive mediate accident العارض المساوى للمعروض (literally the accident which is co-extensive with the thing of which it is the accident) are called essential accidents اعراض ذاتية because they lean on the essence ذات of the thing of which they are the accidents ; the last three are called foreign accidents اعراض غريبة. Examples of foreign accidents : 1. "Risible" as an accident of animal ; it is mediate being the effect of joy and more limited than animal being peculiar to man. 2. "Moveable" as an accident of white. It is originally an accident of body, but some bodies are white and therefore it may be an accident of white. 3. "Warm" as an accident of water which is cold in its nature. This is the division of accidents observed by logicians, in metaphysics they are differently divided.

7. It is usual to call that which leads to apprehension *oratio explicans* [or mo'arrif "*definiens*"] ; and that which leads to declaration, argument. It behoves us to premit the former to the latter in our system, because apprehension precedes declaration in nature, inasmuch as every declaration must contain [firstly] the apprehension of the subject itself, or of an assertion regarding it ; and [secondly either the apprehension itself of the thing] whereby the judgment is formed,

affirmatively or negatively. The whole [apprehension and a judgment combined] is called declaration.

1. Taçawwur, "apprehension" is a verbal noun derived from çúrat "image." Simple apprehension is called taçawwur sàdzij التصور الساذج. The latter word is derived from the Persian ساده plain.

2. الشي "thing" is one of the most general terms in the language and includes both the *res* and *conception* of western Logic.

3. 'aql "mind" is sometimes defined as "a substance free from matter in its essence and in its operations." It answers to the Greek word logos and is also used like logos for demiurg : in this case it is rendered by logos in this translation as in § 30, 31, but for the adjective 'aqly invariably "mental" is used. More on this subject in philosophy. The commentator uses also the expressions "apprehension in the soul" تصور فی النفس and "images in the intellect" صور فی الذهن as synonymous with apprehension in the mind. There occurs also التصور الذهنية "intellective apprehension." Soul is defined as a substance free from matter in its essence (in itself) but not in its actions ; and intellect is defined as the faculty, made for the acquisition (perception) of limits (definitions, *i. e.* apprehensions) and views (judgments).

4. Taçdyq "declaration" is the verbal noun of the causative form of çádiq "true" and means to declare that a thing is true, assertion. It is used in phrases like this "the assertion that negative and affirmative cannot be united" "the assertion that the world is not eternal." The verb of this root is used for to "be predicated" to "be applicable." Arabic Logicians also use Kádzib "false" to express "not predicated." If we say Mohammad is a prophet, and he is not a poet, it is as much as to say the being a prophet is true of Mohammad and the being a poet is not true of him. As the terms seem to be well chosen they are rendered literally in this translation.

5. The Commentator says 'to lean a thing on another' is to pronounce that *the* relation takes place between them or that it does not take place. If we say *homo est scribens,* we pronounce that the relation takes place between *homo* and *scribens.* The commentator enters into some metaphysical details, he says we must in this instance first perceive man then the notion of *scribens,* then the relation that "writing" can be affirmed of man and then whether that relation is taking place or not. The relation of the two terms is called judicial relation النسبة الحكمية (in contradistinction to نسبة بين بين or relation between two words in the status constructus as "Zayd's wife,") and the affirmation that it is taking place is called judgment حكم. In doubt or supposition we perceive the judicial relation without arriving at a judgment. But we cannot arrive at a declaration without judgment. Modern philosophers are of opinion that judgment is not a perception but an act of the intellect. In perception the mind is passive, whereas in judgment it is active. If judgment is a perception, a declaration consists of four perceptions as detailed above, else it contains three. But according to Arabic metaphysicians a declaration is the same as judgment and nothing further. *H*amd Allah considers the separation of apprehension and judgment as artificial and contends that declaration is usually one act of the mind—complex apprehension.

4. Neither is the whole of either of these two things entirely intuitive, else there would be nothing we do not know ; nor entirely deductive, else our reasoning would be a circle, or an [interminable] chain.

6. Natzary "deductive" from natzar "to inspect to consider" is used in opposition to badyhy intuitive (literally sudden) and also to practical. Thus medicine is divided into deductive (*i. e.* theoretical) and practical عملي. Instead of natzary the word kisby "acquired" and instead of badyhy the term dhorúry "necessary" "axiomatic" are also used.

5. Part of each is intuitive, and part is deductive, and the result of reasoning, *i. e.* of such an arrangement of known things [in the mind] that they lead to [the knowledge of] unknown things. But this arrangement is not always correct, for some thinkers contradict others as regards the results of their reasonings, nay the same person contradicts himself at different times ; therefore a canon (a code of rules) is required, acquainting us with the ways of deriving deductive knowledge from self-

THE LOGIC OF THE ARABIANS.

1. PRAISE be to God, who has created the system of the universe, who has produced the essences of things in conformity with their existence, who has made by His omnipotence the different species of mental substances (*i. e.* logoi or demiurgs), and who, in His bounty, has given motion to the heavenly bodies.

Blessings be upon those noble and holy essences (inspired persons) who are pure from human defilement, more particularly upon Mohammad, the doer of signs and miracles, and upon his family and his companions who followed him [and thereby became] his argument and demonstration.

2. Whereas, agreeably to the opinion of all men of mind and liberal education, the sciences, more particularly the positive sciences, are the highest pursuits in life, and whereas the professors thereof are the most noble among human beings, their minds being sooner prepared to be absorbed into the angelic minds (that is to say, the demiurgs or logoi), and farther, whereas it is impossible to comprehend the subtilties of sciences and to preserve the acme of their verities except by the assistance of the science which is called LOGIC, and which teaches us how to discern between what is correct and erroneous, Shams aldyn Mohammad, a son of the Wazyr Bahâ aldyn Mohammad, has desired me to write a book, which shall comprize the principles of Logic, and contain its fundamental doctrines and rules. Ready to follow his directions, I began to write a book on Logic, making it a rule not to omit any thing that belongs to it. I made some beautiful original additions and acute observations, avoided mere compilation and followed plain truths, which will never be controverted. I gave it the name of *Risálah Shamsyyah on the Principles of Logic*, and divided it into an Introduction, three Books and a Conclusion. My reliance is in God.

INTRODUCTION.

It contains two inquiries:

FIRST INQUIRY.

On what Logic is and its utility.

3. Knowledge is either apprehension, and nothing further or apprehension together with judgment. Apprehension is the perception of the image of a thing in the mind. Judgment means referring (literally leaning) one thing to another

The right way of studying Arabic Logic would be to take the Arabic translations of Aristotle's organon and by comparing them with the Greek text to ascertain the original import of the terms, and then to observe how their meaning has been changed in the progress of time. Such a labour can only be undertaken at Paris or in the Escurial; no translation of Aristotle's works is to be found in Indian libraries.

It was the intention of the translator to consult, whilst he was engaged with his works, as many Arabic books on Logic as he might have access to, and to point out in notes their differences with a view of throwing light on the history of Logic among the Arabs. But he had hardly commenced his task when he was compelled by ill-health to apply for leave to Syria, and he had to make up his mind either to publish his translation in an imperfect form or to suppress it altogether. Luckily he found a man, who has a most intimate knowledge of Logic, and who was good enough to go over the translation with him. This man is the Revd. W. Kay, Principal of Bishop's College. He has corrected a great many mistakes not only in the language but also in the sense, for his skill in logical reasoning enabled him in most instances to discover errors at first sight. To him the translator is under great obligations.

The translator was obliged, owing to his departure from Calcutta, to leave the correction of the greater part of the original text to his friends Mawlawies Mo*h*ammad Wajyh and 'Abd al-*H*aqq. No men are better able to furnish a good text than they, particularly as there are several good editions with commentaries extant, of these two treatises.

Calcutta, 1*st April*, 1854.

PREFACE OF THE TRANSLATOR.

Ever since the sixth century of the Hijrah, the Mussalmans abandoned the path of observation and of the acquisition of new facts altogether, and considered all sciences merely as dialectic exercises. It was therefore found expedient that, the first of the compendia, which are to form the Appendix of the Dictionary of technical terms, should be a Treatise on Logic.

The Risálah Shamsyyah having, during six hundred years, been the principal text book on Logic in all Mo*h*ammadun schools, appeared to have the best claims to represent the Logic of the Mussalmans. It is therefore here published with an English translation.

Regarding the author of this treatise, I translate a passage from the Nafáyis al-Mâthir (see my Catalogue of the Oudh Libraries, I. p. 46). It is said in the biography of Amyr Kolong, "Mawláná Najm adyn Kátiby Qazwyny was a profound philosopher and a pupil of Athyr adyn Abhary. He is the author of commentaries on the Talakhkhuç, on the Mo*h*aççal and on the *H*ikmat al'ayn and of the Risálah Shamsyyah and the Jámiy' aldaqáyiq. He died on Friday the 3rd of Rajab 675, (11 December 1272.)" *H*ájy Khalyfah says, that he was a pupil of Naçyr aldyn *T*úsy, and No. 7667 he places his death in 693, but he gives the correct date under No. 4586.

There is another treatise called Sollam, which is very celebrated in India, and which is considered as the acme of acuteness and conciseness. It has been added in Arabic, with a short biography of the author, but without translation, to enable the Arabic reader to exercise his acumen on it.

The translation is literal. Technical terms of the Arabic language have been rendered by such English words as appeared to the translator by etymology and usage to express most nearly their meaning, and the same representative is used in the translation throughout for the same term of the original; for instance, English Logicians in speaking of nouns use "singular" and "common" very nearly in the same sense as they use in speaking of propositions "particular" and "universal." The Arabs use the same terms in both instances, and as *juzyy* is derived from *juz* "part" and *kullyy* from *kull* "all" "universe;" the translator has, wherever the word *juzyy* occurred, rendered it by "particular," and wherever the word *kullyy* occurred, by "universal;" and so in other instances, placing where required the word which an English Logician might have employed between brackets. Explanatory additions are placed between parentheses. Both the paragraphs and notes have been numbered in order to facilitate reference."

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PUBLISHED UNDER THE PATRONAGE OF THE

Hon. Court of Directors of the East India Company,

AND THE SUPERINTENDENCE OF THE

ASIATIC SOCIETY OF BENGAL

No. 88.

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USED IN THE

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CONTAINING

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IN THE

ORIGINAL ARABIC, WITH AN ENGLISH TRANSLATION.

BY

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CALCUTTA:

F. CARBERY, BENGAL MILITARY ORPHAN PRESS.

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COLLECTION OF ORIENTAL WORKS

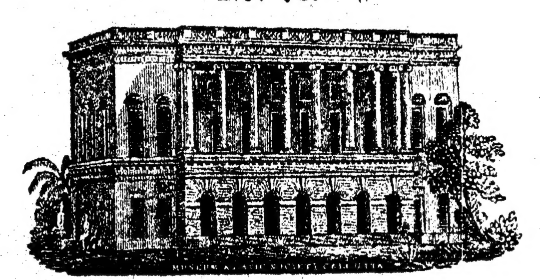
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FASCICULUS 1st.

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